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# USING VIDEO BASED INSTRUCTION TO TEACH ART TO STUDENTS WITH AUTISM SPECTRUM DISORDER

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# USING VIDEO BASED INTSTRUCTION TO TEACH ART TO STUDENTS WITH AUTISM SPECTRUM DISORDER

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THESIS

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A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Arts in the
College of Fine Arts, Department of Art
at the University of Kentucky

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# ABSTRACT OF THESIS

## USING VIDEO BASED INTSTRUCTION TO TEACH ART TO STUDENTS WITH AUTISM SPECTRUM DISORDER

Students with Autism Spectrum Disorders often do not respond to common pedagogical strategies and traditional in vivo teaching approaches. From my observations, students diagnosed with Autism Spectrum Disorders learn best when material is presented through technology. Based on the information found in the literature review and personal observations from working with students with special needs, when students with Autism Spectrum Disorders receive video based instruction by watching recorded art lessons, they may learn to develop artistic skills and retain more art content knowledge with greater success than through traditional teaching methods. The purpose of this research study is to test the hypothesis that video based teaching methods can improve the learning of students with autism in a series of art lessons.

*Keywords:* Autism Spectrum Disorder, video based instruction, art, autism, traditional teaching methods

Anthony Woodruff

May 5, 2014

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I would like to thank my friends and family for their kind support and enthusiasm during this project. I would finally like to thank both Lafayette High School and Tates Creek High School for allowing me the opportunity to work with their students and teachers.

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# Chapter One: Introduction

## Background to the Problem

I have students that are prone to having violent and aggressive behavior during instruction. I have students that may become upset if you make eye contact with them. My students have impaired social and communication skills, causing them to yell and scream when they become frustrated. I have students that can create art. I have students that enjoy working with technology. I have exciting, diverse, intelligent, and creative students with Autism Spectrum Disorder (ASD) that struggle acquiring new information from traditional teaching methods in their visual art classes.

Some of these students create art independently in their free time without directions. One student will repeatedly draw an elephant, a birthday cake, famous singers or animals, while some students draw complex characters with background stories or drawings of what they see in their environment. The students that create this art are also very skilled with using technology. During their free time, when not creating art, they are on the computer watching videos, ranging from classic Disney cartoons to current music videos. They will often draw pictures or sing songs from the videos they watch. These students have retained information from what they have watched in those video clips.

During my time as a special education Paraeducator, I have also witnessed video lessons being used to teach students both social and recreation skills. In an unpublished study, "Teaching Students to Play the Wii Using Video Models," Sherrow, Spriggs, and Knight (2012) used a video model to teach students to bowl on the Nintendo Wii. After viewing a video model, a task analysis was used to measure students' ability to turn on the game system, start a game, play, and

terminate the game upon completion. Of the study's four male participants, three had a diagnosis of ASD. All four participants showed quick acquisition and maintenance of skills taught via video modeling.

From observations, students with ASD show higher rates of acquisition retention of material when presented via technology. I believe that when students receive video based instruction for a series of visual art lessons, they will develop artistic skills and art content knowledge more successfully than through traditional in vivo pedagogical methods such as teacher lectures, presentations, direct instruction and student note taking.

## Statement of the Problem

Due to social impairments and challenges with student/teacher interactions during traditional in vivo teaching methods, students with ASD have difficulties learning about visual art when teachers use traditional in vivo teaching methods and common pedagogical strategies. This research seeks to remedy these issues by comparing the use of video based instruction and traditional in vivo teaching methods in suburban high school students diagnosed with ASD.

## Significance of the Study

This study contributes to the literature about the effectiveness of video based instruction and its use as a tool to increase our students' ability to learn. By combining a visual art lesson with technology via video modeled lessons, students may learn at higher levels when compared to traditional in vivo lessons. Using the data gained from this research and applying these strategies may have a positive impact on teaching all students, with or without disabilities, in fields outside of art education. In addition, this study may be significant to both the fields of art education and special education because this research could provide the foundation for integrating this video based approach into general education art classrooms and other content areas. This research

seeks to show teachers from every field the importance of integrating more video based instruction into their teaching.

## Purpose of the Study

The purpose of this study was to test the hypothesis that video based instruction can increase the learning of students with ASD when compared to traditional in vivo teaching methods in visual art based lessons. Students were tested in both the development of art skills and their retention of art content knowledge through three different art activities; painting a color wheel, drawing a value scale, and creating a pinch pot. Pre and post test data were measured along with task analyses data sheets to determine which teaching method had a greater impact on students.

## Definition of Terms

Adapted Alternating Treatment Design- . A type of single subject research where the participant acts as their own control group through baseline data testing collected prior to exposure to alternating treatments. Alternating Treatment Design requires the rapid alternation of two or more distinct treatments to evaluate the effects on a single target behavior through data collection. Once the most effective treatment is determined, the study uses the most effective treatment only to further demonstrate experimental control. Baseline data are collected prior to the interventions to evaluate the effectiveness of the treatments (Gast & Ledford, 2010).

Autism – according to the Diagnostic and Statistical Manual-IV (DSM –IV), ASD is a variable developmental disorder that appears by age three and is characterized by impairment of the ability to form normal social relationships, by impairment of the ability to communicate with others, and by stereotyped behavior patterns, especially as exhibited by a preoccupation with repetitive activities, and adherence to routines (APA, 2000).

Aspergers Syndrome - a developmental disorder on the autism spectrum, according to the DSM-IV, that is characterized by same impairments in social interaction, repetitive patterns of behavior, and restricted interests. However, individuals with by Aspergers have more normative communication skills and cognitive abilities than their peers with autism. (APA, 2000).

Autism Spectrum Disorder – (ASD): a group of developmental disorders (as autism and Asperger's syndrome) marked by impairments in the ability to communicate and interact socially and by the presence of repetitive behaviors or restricted interests (APA, 2000).

The Autism Diagnostic Observation Schedule - (ADOS): is a semi structured, standardized assessment of social interaction, communication, play, and imaginative use of materials for individuals suspected of having ASD. The observational schedule consists of four 30-minute modules, each designed to be administered to individuals according to their level of expressive language (Lord, C., Risi, S., Lambrecht, L., Cook Jr, E. H., Leventhal, B. L., DiLavore, P. C., & Rutter, M. 2000).

Individual Education Plan- (IEP): a legally binding document mandated by the Individuals with Disabilities Education Act (IDEA). An IEP is designed to explicitly state the special education services a student will receive. The IEP is individualized for each student, outlining the diagnosis, disability, levels of performance, educational goals, objectives, and the amount of related services required.

iMovie- video editing software application sold by Apple Inc. for OX S operating systems. iMovie has the ability to edit the photos and video clips; add titles, music, and effects; use video enhancement tools; and include transitions such as fading and slides.

Least Restrictive Environment - The Individuals with Disabilities Education Act (IDEA), mandates that students with disabilities must have the opportunity to be educated with non-

disabled peers to the greatest extent appropriate. They must have access to the general education curriculum and other programs provided to their non-disabled peers.

The Gilliam Autism Rating Scale (GARS) – The GARS is one of the most widely used instruments for the assessment of ASD. The GARS assists teachers, parents, and clinicians in identifying ASD and estimating its severity. The test consists of 56 items describing the typical characteristic behaviors associated with ASD. There are six subscales: Restrictive/Repetitive Behaviors, Social Interaction, Social Communication, Emotional Responses, Cognitive Style, and Maladaptive Speech (Gilliam, 1995).

QuickTime- a digital video format that plays on both PC and Mac computers and tablets.

YouTube – a public online video sharing website where short videos can be uploaded and shared. Videos can be searched and viewed by anyone with access to the internet.

Meta-Analysis - methods focused on contrasting and combining the statistical results from different studies focused on the same subject to identify data patterns.

Social Narrative- an evidence-based practice that uses structured stories to model appropriate social interactions by describing a situation with relevant social cues, and a suggested appropriate response.

Video Modeling - a form of observational learning where a target behavior is demonstrated on video then the learner has the opportunity to imitate the observed behavior (Nikopolous & Keenan, 2006).

Traditional In Vivo Teaching Methods and Pedagogical Strategies - emphasizes teacher lectures, presentations, direct instruction and student note taking. These lessons have an emphasis on student and teacher interactions.

Task Analysis Data Sheet - Task analysis is the process of breaking a skill into smaller, measurable steps in order to teach the skill. As the smaller steps are mastered, the learner increases their ability to independently perform the skill in its entirety (Szidon, K., & Franzone, E. 2010). As the data is collected, the growth of the students to perform the overall skill is shown.

Innerobserver Agreement – A trained observer in data collection observed the participant's behavior while they created the art project and recorded results on a task analysis data sheet in order to ensure accuracy of data collection. The researcher and observer used identical data collection sheets simultaneously to record the participant's completion of steps to ensure the agreement in data. Agreement was determined by dividing the number of agreements by the number of agreements plus disagreements multiplied by 100% (Gast & Ledford, 2010).

Procedural Reliability - A trained observer recorded procedural reliability data to measure the treatment fidelity of both the primary and secondary researchers' behavior. The observer used a checklist of five behaviors. Procedural reliability was calculated by dividing the total number of observed behaviors by the total number of expected behaviors multiplied by 100% (Gast & Ledford, 2010).

## Limitations of the Study

The limitations of this study include irreproducible variables that cannot be reproduced in continued research on this subject. If you are looking into this study it is important to understand that one student with autism is one student with autism and even though these students may share some of the same characteristics, they are very unique individuals. Unless this study is repeated using the same students and in the same settings, your results may vary slightly from the research. It is important to note that the students involved in this research were from two local suburban high schools in an urban city within a rural southeastern state. The primary researcher

administered the lessons and collected data at one school, while the secondary researcher did the same at the other school. Throughout this research project, both the primary and secondary researchers applied the same approach in order to ensure that data collection was consistent and collected in the same method. With these limitations this study will show the impact that video based instruction has on the learning of students with ASD in visual art based lessons. To further prove the validity of this research, future study should be done on this topic.

# Chapter Two: Review of Related Literature

## Bridging Art Education and Special Education

Hicks (1895) described three stages in the growth of American art education: first, teaching drawing as a means of improving industrial products; second, teaching drawing as a means of developing mental abilities; and, third, providing a broader art instruction with an aesthetic focus to help students perceive and express what she called the beautiful. She created an interpretive framework in an attempt to connect the meaningfulness of past ideas and events by explaining their usefulness to present problems (La Pierre & Zimmerman, 1997). Though Hicks wrote about influential ideas in art education, her position on reaching students with art was made in 1895 and is now somewhat antiquated. Drawing can improve industrial products and develop critical thinking skills through activities in developing new designs and it is imperative to teach aesthetics. Hicks' ideologies have had a significant impact on art education, however, to improve education strategies, teaching methods need to change to meet the needs of today's diverse students.

Today there is a need to connect what has been taught through the history of art education to the students that are now in our classrooms receiving art instruction in inclusive settings. Gerber and Guay (2006) describe today's inclusive art class with students functioning at lower levels of skill, communication, and academic achievement working side by side with students who are intellectually and artistically gifted. While teaching students with disabilities presents its own sets of challenges, addressing the needs of those students in order to make connections to the visual arts can become even more difficult due to their individual needs. In order to address these needs, there needs to be a greater partnership between art education and special education and the connection between learning and the advances in educational technology cannot be ignored.

Not only do art educators have to collaborate with their fellow art teachers, but they must collaborate with teachers in other areas, as well. All teachers, no matter their area of expertise, can learn a great deal in how to improve their teaching by working closely with special education teachers. Special education teachers use methods and materials in their classrooms designed to reach students who struggle with learning through traditional in vivo teaching methods. In the 2011 National Art Education Association Lowenfeld Lecture, Beverly Levett Gerber spoke about the promising partnership when art educators and special educators share their ideas. In her presentation, Gerber spoke of the several world renowned artists with disabilities, such as Chuck Close, Dale Chihuly, and Robert Rauschenberg. With accommodations, these artists invented their own unique styles and creations while working around the challenges presented by their disabilities (2011). Aside from the lecture given annually in his name, Viktor Lowenfeld was a pioneer in his work establishing connections between art education and special education.

In Lowenfeld's third edition of *Creative and Mental Growth* (1957), he stated "to start on the individual is indeed an educational principal which should always be kept in mind" (p. 437). The stages of artistic development and the sample drawings found in *Creative and Mental Growth* correlate to the varying ability levels of students with disabilities. Gerber (2011) observed that the drawings made by her students were better indicators of their current educational levels than information about age, grade level, or test scores. The stages of artistic development can be seen in the artistic works of students with special needs, but those students are also creating remarkable drawings with amazing attention to detail. Students with special needs, ASD in particular, who had shown these unique and remarkable skills urged this study to take place in order to learn more about ASD and the connections that these students have with the visual arts.

## Autism, an Introduction

The prevalence of ASD diagnoses has risen in recent years. Although some researchers believe ASD to be a genetic condition, others suspect a link between ASD and environmental factors. Due to the complexity of genetics and lack of any one distinguishing characteristic, ASD is diagnosed through behavioral observations. An article in the British Medical Journal provides an outline of how the diagnosis of ASD is made and what features to look for: lack of eye contact, obsessive behaviors, repetitive behaviors, etc. (Baird, Cass, & Slonims, 2003). There has been a push for pediatricians to screen for autism in order to make earlier diagnoses and access to earlier interventions. With the increase in diagnoses, ASD has become the fastest growing developmental disability. According the Center for Disease Control (2012), 1 in 150 children in the United States today have been diagnosed with ASD, a figure that has continued to increase in recent years. There are currently approximately 560,000 people under the age of 21 in the United States with ASD.

In 1980 the American Psychiatric Association (APA) introduced Pervasive Developmental Disorder (PDD). Allen, Rapin, and Wiznitzer (1988), proposed that not every individual diagnosis of PDD required the same distinct conditions, instead, that characteristic traits would be better represented on a spectrum of severity based around one disorder. ASD became the new widely accepted term to describe characteristics shared by both autism and Asperger's Syndrome. The DSM-IV defined ASD as a neurological disorder characterized by qualitative impairment in social interaction and communication as well as the presence of restricted, repetitive, and stereotyped patterns of behaviors, interests, and activities (APA, 2000).

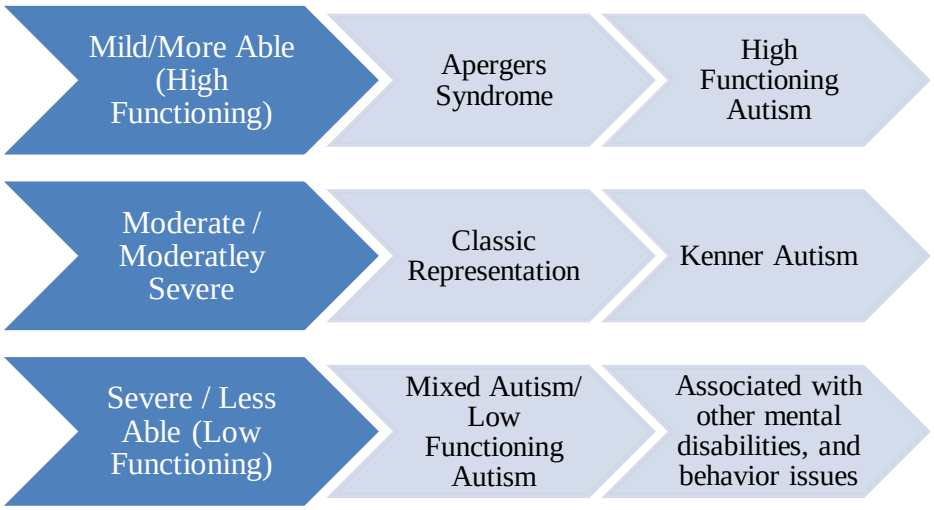
Autism was first documented by Leo Kenner, an early childhood psychologist who studied 11 children with similar symptoms: poor social interaction, stereotyped obsessive behaviors, and poor language (1943). Shortly after Kenner's initial study, Hans Asperger

characterized a higher functioning form of autism which was named Asperger's Syndrome. Asperger (1944) described this condition as a developmental disorder resembling autism characterized by impaired social interaction, repetitive patterns of behavior and restricted interests, normal language and cognitive development, and often by above average performance in a narrow field against a general background of deficient functioning.

Professionals agree that autism exists on a continuum or spectrum, ranging from mild to severe, which is part of an array of varied but similar entities. Hence, the spectrum in ASD encompasses all students diagnosed with autism.

"The Autism Spectrum Disorders Continuum"

Twachtman-Cullen, D. (2010).




When viewing the figure above, outlined by Twachtman-Cullen, D. (2010), at one end of the continuum are the diagnostic categories of high functioning autism and Asperger's syndrome. There is disagreement within the ASD research community regarding whether the autism and Asperger's are separate and distinct conditions, while others feel that Asperger's syndrome is a form of high functioning autism. Another type of disorder found at the milder end of the

spectrum which is not listed in the graph above is PDD and PDD-not otherwise specified (PDD-NOS).

At the more severe end of the spectrum, ASD is often mixed with other conditions. The presence of additional conditions like Fragile X syndrome and mental retardation further complicate both the diagnostic procedures and educational programing for the child. Additional disorders such as celiac disease, nonverbal learning disabilities, bipolar disorder, obsessive-compulsive disorder, attention deficit hyperactivity disorder, and dyslexia further complicate ASD diagnoses (Twachtman-Cullen, 2010). ASD can exist with or without additional conditions and the student may still be placed on any part of the spectrum. Students may also be placed on the more severe end of the spectrum due to their negative behaviors such as violence and aggression toward others and self-injurious behavior. With the release of the DSM-V, Asperger's syndrome is no longer included within the manual. Despite the elimination, there are still many social and obsessive behaviors shared by Asperger's and ASD. The APA (2013) ranked the levels of severity to outline the observable social communication and behavior deficits in ASD.

"Severity Levels for Autism Spectrum Disorders"

APA (2013).

| Severity Level | Social Communication | Restricted, Repetitive Behaviors |
|---|---|---|
| Level 3<br>"Requiring very substantial support" | Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others. | Inflexibility of behavior, extreme difficulty coping with change, repetitive behaviors markedly interfere with functioning in all spheres. Great distress and difficulty changing focus or action. |
| Level 2<br>"Requiring substantial support" | Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions; and reduced responses to social overtures from others | Inflexibility of behavior, difficulty coping with change or other repetitive behaviors appears frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Difficulty |

"Severity Levels for Autism Spectrum Disorders" (continued)

| | | |
|---|---|---|
| | | changing focus or action. |
| Level 1<br>"Requiring support" | Without supports in place, deficits in social communication cause noticeable impairments. Difficulty initiating social interactions, and clear examples of atypical responses to overtures of others. May appear to have decreased interest in social interactions. | Inflexibility of behavior causes significant interference with functioning in one or more contexts. Difficulty switching between activities and problems of organization hamper independence. |

After mentioning the change in the DSM to the newer fifth edition, the remainder of this research will refer back to the DSM – IV criteria when referring to students with ASD. Nevertheless, within both versions of the DSM, the autism spectrum includes multiple levels of ability and severity which makes every student that is diagnosed with ASD very different. The heterogeneous nature of ASD creates varying levels of severity which make it difficult to assign mass characteristics to those with the diagnosis. Researchers in the field of special education have developed multiple evidence-based strategies that show high levels of success when working with students with ASD. Some students require intensive supports to be successful, while others require minimal prompts and adaptations. Although there are large variations in educational needs, there are numerous similarities.

Despite the increase in research on ASD, there are many unknowns surrounding the disorder. Martin (2009) stated that for every description that has been given of autism, there are always exceptions that break these definitions. In the same manner as their neuro-typical peers, students with ASD are complex individuals living within their unique context within a much deeper picture surrounding their lives. Students with ASD are a diverse group and it can be difficult to facilitate positive connections within the art classroom due to their disabilities. However, students with ASD have shown great interest in the visual arts and there are many talented young artists in today's schools that are creating great works of art.

## The Needed Connection between Art and Autism

According to IDEA, students with disabilities must have the same access to education as their non-disabled peers, including the opportunity to express their creativity and develop skills in the visual arts. Students with ASD have benefited from exposure to art and many believe that those students need art incorporated into their daily education. With their strengths as visual learners, art is an interesting crossroads for children with ASD due to the merger of deficits of imagination and need for sensory control into one activity (Martin 2009). Students may have a hard time engaging in art activities appropriately without the one-on-one attention that may be required due to sensory issues. For art classes to have the greatest impact on the student, lessons should be about thirty minutes in length since these children may have difficulty attending to tasks and may become bored or frustrated in longer lessons, resulting in an aversion to the lesson or undesired behavior to escape the lesson (Furniss, 2006).

Art projects are beneficial to students on the autism spectrum because art has the ability to help these students meet the following goals: developing imagination, sensory regulation, emotions/self-expression, developmental growth, visual-spatial skills, and recreation skills (Martin, 2009). Flowers (1992) points out that all children benefit from art, but children with ASD in particular may experience growth in the following areas through art exercises: physical, social, and language skills; responses to sensations affecting one sense or a combination senses or responses, reactions to pain, and the way the child holds his or her body; speech and language, and manner in which they relate to people, objects, and events. Students diagnosed with ASD will exhibit deficits in at least one of those areas (Flowers, 1992).

As more students are included in art education settings, art teachers need to be prepared to teach students with disabilities (Guay, 1994; Hillert, 1997). It is necessary for teachers to know how to work directly with students with disabilities and to know how to guide, support, and

collaborate with other school personnel, professionals and families. The current literature on the connections between ASD and art lack input from students with ASD about their experiences in art education and art-making (Burdick 2011). While this may be related to the disorder's impact on communication, it is imperative that the opinions of students with ASD are taken into account to provide additional insight on ways to improve their access to art curriculum.

Even though it is difficult to find literature that quotes students with ASD about their opinions of art, we can look at Donna Williams, an artist with ASD, who coined the word "ARTism". She defines the term on her website:

> My use of the word 'ARTism' came from my description of the relationship between autism and art and I've been using the term since 2000. There's an interaction between autism and artism on so many levels. I believe the artistic personality may occur commonly in people with Autism, particularly those with a constant pattern of mood extremes (Williams, 2000).

Williams points out the influence of art on people with ASD, through her creation of the word "ARTism" and her personal connections to art. While there is literature to support the benefits of art for students with ASD, many art educators may still have concerns and show reluctance when working with these students.

There are misconceptions within the field of art education regarding low intellectual abilities in students with ASD that present potential barriers for providing meaningful engagement activities. Utilizing inappropriate materials, such as juvenile coloring books or having the student's paraeducator complete the project for them is not only unnecessary, but it deprives the student of their right to access of the curriculum (Burdick, 2011).

While some students with ASD may demonstrate savant-like abilities, with extensive knowledge in a single area of interest, or splinter skills within the arts a majority of the students art educators encounter may not be that high functioning. Students on the lower functioning end

of the spectrum can still make meaningful connections with art when presented in an accessible format. The misconceptions that students with ASD lack the required skills to participate have been dispelled by research focused on the art created by students with autism (Burdick, 2011; Koo, 2008).

In a recent study, the art experiences and connections of adolescents with ASD were compared and measured through interviews, observations, and looking at samples of created artwork (Burdick, 2011). That study focused on art created by 13 elementary and middle school students with ASD in a variety of art education settings, including public schools, private schools, personalized lessons at art studios, community based art education, and in-home settings.

In another study, Koo (2008) researched the role of artistic expression and creativity in young artists with ASD and their motivation for engaging in art activities. Through observations and interviews, Koo's research sought answers to the following questions:

> What is the meaning and potential of art for children with autism? How do children with autism engage in art activities? In what ways do the artistic activities of children with autism engage their cognitive and perceptual processes? What is the benefit of artistically creative activities for children with autism? (Koo, 2008).

Through their own research, both Burdick (2011) and Koo (2008) have found the significance that art can have on students with ASD.

Despite their agreement about the importance of art for students with ASD, Gerber and Kellman (2010) observed that students who communicate nonverbally yet do not have a reliable or widely understood method of communication which presents significant challenges during instruction. Nonverbal students frequently can use technology as mode of alternative communication. Options for alternative communication technology include voice output devices with pre-recorded messages, picture-based communication boards, text-to-speech software, tablet

computers with communication apps, and speech generating computers (Gerber & Kellman, 2010). These devices increase students' abilities to communicate and learn through the use of technology. While the technologies are frequently used in special education classrooms, their use can be generalized to other areas, including art classrooms. One form of technology that has shown to be highly effective in teaching students with ASD is video based instruction (Bellini & Akullian, 2007).

## Video Based Instruction

In order to address a variety of learning styles, teachers may use video clips to enhance instruction. Video clips can to add to lessons by presenting classic historical information in a modern way that is more accessible to students than traditional in vivo teaching. With access to video sharing websites such as YouTube, it is easy for teachers to find educational video clips that have positive impacts on the acquisition of information for all students.

According to YouTube (2010), more than 24 hours of video are uploaded to the site every minute, which is an increase from 10 hours of video uploaded every minute just 2 years prior. People of all ages are creating, uploading, and viewing this entire collection of video media. The availability of viewing videos on websites like YouTube, and other similar internet sights, offers every expanding opportunities' for learning and engagement that have never before existed.

Bull and Bell (2010) state that, digital videos have now become a common feature of commercial, religious, political, and government contexts, as well as social interactions. In order for a school to remain relevant to its increasing tech savvy students and to the 21st century workforce, educators must also consider if and when digital videos should be adapted into their lesson plans for everyday classroom use. Watching videos within the classroom facilitates knowledge building, which allows students to acquire a better grasp of the concepts and add to their understanding in ways that go past traditional teaching methods. A short video clip can be

combined with a background document in order to quickly provide information, develop an instructional process, or an illustration of student engagement in a manner that would be difficult to achieve in other ways.

Educators can easily use digital videos as a way to communicate information with their students because students today engage in watching video clips on digital media during their spare time. Students born in 1990 or later probably cannot remember a time when videos could not be played on the computer. Students today have a hard time grasping the idea that videos used to be played on VHS tape formats or music used to be played on cassette tapes. Every year, Compact Discs become more and more outdated. The first version of QuickTime, a digital video format that plays on both PC and Mac, emerged around this time and the use of digital video has dramatically increased since then (Bull & Bell 2010). Survey results from The Pew Internet and American Life Project reported that approximately 40% of U.S. teens own a video camera. With the ability to take high quality videos and internet connectivity on cell phones, teens have constant access to video recording and internet access. Video sharing websites, like YouTube, can be directly linked to widely used social networking sites such as Facebook and Twitter (Rainie, 2009).

Millions of students across the United States cannot benefit fully from a traditional educational program because they have a disability that impairs their ability to participate in a general education setting. For these students, computer-based technologies can play an especially important role (Hasselbring & Glaser, 2000). Many research studies have shown that using video based instruction can have positive impact on the learning of students diagnosed with ASD.

## Teaching Students with ASD through Video Instruction

Today's students are growing up in the "digital age." They are being raised in a society that is changing rapidly and as a result of the influx of new computer based technologies we have

been provided with faster links to communication, commerce, and culture. With these improvements, students have easy access and increased engagement to technology as well. Technology facilitates the ability to make personal connections with others through social media, video chats, and email. It also provides opportunities to focus on a variety of skills within a highly motivating context. Hasselbring and Glaser (2000) stated that students with cognitive disabilities often demonstrate higher-level performance and attention to detail when working on multimedia projects than when working in other mediums. The results of numerous research studies suggest that video modeling interventions are effective in teaching a variety of skills to students with ASD (Bellini & Akullian, 2007; Carpentieri & Morgan, 1996; Charlop-Christy, Le, & Freeman, 2000; Nikopolous, Canavan, & Nikopolous-Smyrni, 2009; Nikopolous & Keenan, 2004; Shipley-Benamou, Lutzker, & Taubman, 2002; Sherrow, Spriggs, & Knight, 2012).

Video Modeling is defined as a form of observational learning where a target behavior is demonstrated on video then the learner has the opportunity to imitate the observed behavior (Nikopolous & Keenan, 2004). Researchers have used video modeling interventions with children with ASD to improve social, communication, and functional living skills. The acquisitions of these skills are vital for children with ASD (Delano, 2007). Nikopoulous and Keenan (2004) found that when exposed to video models, students with ASD showed higher levels of maintenance of desired behaviors after watching video models of social initiations and play.

Bellini and Akullian (2007) completed a meta-analysis looking for the connection between video modeling and inventions for children and adolescents with ASD. They found results suggesting that video modeling is an effective intervention strategy for improving social communication skills, functional skills, and behavioral functioning in children and adolescents with ASD. Charlop-Christy, Le, and Freeman (2000) showed that video based instruction led to

faster acquisition and higher levels of generalization than traditional in vivo methods for social and cooperative play skills with students with ASD.

The results of a study by Sherrow, Spriggs, and Knight (2012) also showed a positive connection between video modeling and students with ASD. Their study demonstrated that video modeling could be an effective way to teach video games to students with both ASD and other cognitive disabilities. After low levels of success during baseline testing, participants were successful in reaching mastery of skills within a relatively short period of time while using video interventions. Research has shown video modeling to be a successful tool for teaching; breaking down the factors that make it a successful practice can highlight other potentially successful teaching methods.

A marked trait of ASD and intellectual disabilities are the significant impairments in both communication and social skills that can limit the engagement in recreational activities (Blum-Dimaya, Reeve, Reeve, & Hoch, 2010). Because of these added disabilities, students with ASD often have considerable difficulty interacting in social situations and establishing clear communication with others. In addition to social and communication problems, individuals with ASD often demonstrate deficits in functional skills that are generally more pronounced than their cognitive functioning (Carpentieri & Morgan, 1996).

Individuals with ASD, as a group, appear to have greater strengths processing visual information rather than auditory stimuli (Hodgdon, 1995). Charlop-Christy, Le, and Freeman (2000) theorized that video modeling contributed to increased skill acquisition because the participants attended more closely to the video model as compared to a live model. Social interactions can contribute to higher levels of anxiety due to the variety of demands required for reciprocation within a conversation (Bellini, 2004). This anxiety negatively impacts attendance to tasks during traditional in vivo instruction. One benefit of video modeling is that it requires

minimal human interaction, reducing anxiety related to the social interactions. Video modeling allows teachers to remove unpredictable and unwanted stimuli that may negatively impact students during instruction. Video models provide visual instruction in a predictable and repetitive format that eliminates distractions, thus making it an ideal method for instruction for students with ASD.

The success of visually cued instructions, like instructions found in video lessons, have increasingly emerged and been incorporated in modern interventions, because children with ASD have suggested to perform particularly well in visual discrimination tasks. Findings also suggest that video modeling offers many advantages over traditional in vivo teaching methods when it is used in diverse contexts and targeting a wide variety of skills (Nikopoulos, Canavan, & Nikopoulou-Smyrni, 2009). To summarize this statement, video based instruction has had a greater impact on learning than traditional in vivo teaching methods when teaching students with ASD. The use of videos lessons could easily be incorporated into an art lesson, in order to help students with ASD develop art skills, which leads into this research.

## Teaching Art through Video

From this literature review it is clear that the visual arts can play an important role in the social and behavioral development of students with ASD. We also know that using video modeling for teaching social, functional, and behavioral skills can be very successful for students with ASD. These video modeling methods of instruction are successful because students with ASD appear to have greater strengths in processing and learning through visual material rather than auditory stimuli. Research on video based instruction for students with ASD is a promising area for practitioners and researchers. Researchers have successfully used videos to teach a variety of social and functional skills (Ayers & Langone, 2005). We know video modeling is an effective method to teach students with ASD, but is it the only way video based instruction can be

used? Can video based instruction be used effectively beyond teaching social and functional skills and used as an academic teaching tool for building artistic skills and growing art content knowledge?

In all the research studies mentioned above, there has not been research that attempted to use a video to teach an academic subject such as visual art to students with ASD. Students with ASD may learn best, and retain more knowledge when presented material through technology. This current study examined the results when students with ASD were given video based instruction, by watching recorded art lessons, in order to see if they could learn more than through traditional in vivo teaching methods.

Gerber and Kellman (2010) ask the questions, Are new teaching methods required, or will time-honored, special education teaching methods and approaches also work for students with ASD? Do we really need to reinvent the educational wheel or can teaching methods and approaches that have worked for other students with special needs be modified and adapted for students with ASD? New approaches need to be developed when working with students with ASD in order to give them every opportunity to succeed. There will always be ways that we as educators can make improvements to lessons and units so that students learn more. New ideas are always being developed and experimented with in the field of education in order to find new ways to improve student engagement in the classroom. This research is a new approach looking for ways to improve the quality of art education provided to students with ASD.

To further validate the connections between art and technology and to give an example of how ideas are enhanced over time, Lawton (2007) states that the visual arts and technology are mutually dependent upon one another. In fact, much of yesterday‘s technology is today‘s fine art. Two excellent examples of this are printmaking and photography. Printmaking techniques were once used to simultaneously print text and image, to spread religious doctrine, and communicate

important information to the literate as well as the illiterate. Photography, a less labor intensive process than printmaking, replaced it, and is another example of a technological advance that is used for scientific, commercial and fine art purposes. Lawton goes on to add that through a balanced education, which connects the arts and technology, placing equal weight on the importance of each within the curriculum, teachers can encourage both right and left-brain thinking (2007). To help develop thinking through integrating technology and art education, many art programs have developed their own forms of video based instruction.

There are several art schools and programs designed for both high school and undergraduate level students across the country that have blending an art based education with today's easily accessible technology. These programs are providing quality art education courses to students that are unable to attend traditional classroom-based art classes for a variety of reasons, from cost, to scheduling time to attend traditional classes, to geographic constraints (Lawton, 2007). Through these school's web sites, students have unlimited access to their instructors and can download curriculum materials such as visual step by step demonstrations through videos constructed by their instructors, eliminating major concerns such as how to effectively teach traditional studio art skills within a non-traditional format. Lawton (2007) does mention the down side of video based lessons, which is that students do not have the face-to-face advantage of meeting with their peers and instructors. However, that downside may not impact this study's participants with ASD who do not care for the social face to face interactions that exist in traditional in vivo art lessons. From the success of art schools creating online studio courses for non-traditional students, more conclusions could be drawn for the possible success of this research which is attempting similar video based art lessons on a smaller scale for students with ASD.

By combining a visual art lesson and the use of technology by placing those lessons into video clips, students with ASD may learn at higher levels, develop artistic skills, and learn more

art content knowledge, than if the same lesson was taught using traditional in vivo methods. Using the data gained from this research and applying these same strategies may also have a positive impact on teaching all students, with or without disabilities, and beyond the field of art education. In addition, this study may be significant to both the fields of art education and special education because this research could become the foundation for integrating this research study's approach into a regular education art classroom. This research may show its importance as teachers from every field of education start to integrate more video based instruction lessons into their teaching.

# Chapter Three: Design of the Study

## Sample

To obtain permission to work with these students at both study locations, requirements had to be met by the school district's office, and the administration team at each high school. Much of the same information was required of the University of Kentucky Institutional Review Board. Before consent was granted from each participant and their parent/guardian to be included in the study, written permission was collected from each high school's administration to conduct the study at both high schools, as well as the district's director of research. See attached approval documents in Appendix E.

Participants included 7 students that attend a suburban high school and had been diagnosed with ASD, using the Gilliam Autism Rating Scale, Childhood Autism Rating Scale, or the Autism Developmental Observation Schedule. All 7 participants received special education services as outlined by their Individualized Education Plans. The participants received their core instruction in a self-contained special education classroom and attended elective classes with their general education peers. The participants were selected because they had been enrolled in traditional art classes previously, were independently able to access their environment, had enough fine motor skills to independently create art, and showed interest in creating art. The following is a brief overview of this study's participants.

Student 1: CB was an 18-year-old female who received the medical diagnosis of ASD at the age of three through the Childhood Autism Rating Scale (CARS; Schopler, Reichier & Rocher-Renner, 1988). CB was very high functioning academically, but did have behavior issues which made instruction difficult at times. When she was upset, she would scream, hit her fist against her desk, throw things, and attempt to hit teachers; however when her behavior was

escalated, she did respond well to directions given via social narratives. When she spoke, she would answer in one to two word phrases regarding the topic at hand, but occasionally she would also answer with unrelated echolalic phrases. Academically, CB could read passages aloud to the class up to a fourth grade reading level, but was unable to answer comprehension questions from passages at a second grade level. CB could independently solve mathematical problems using a calculator. Even if CB was unfamiliar with her given work, she would still make an attempt to complete the assignment without asking for assistance. During her recreational time, she enjoyed watching video clips on the computer, drawing pictures of celebrities, television characters, and her classmates. Although CB had been exposed to visual arts through her elective classes, she had never received prior art based instruction through video based lessons.

Student 2: KF was a 16-year-old male student and was diagnosed with ASD as well as Sensory Integration Disorder at the age of five using the Gilliam Austim Rating Scale (GARS). KF worked best when he abided by a schedule of planned activities and established routines. He demonstrated difficulty when his schedule needed to be adjusted responding with aggressive behaviors at times, but he would typically respond well to the change when presented a social narrative first. KF displayed many common stereotypical behaviors associated with autism such as hand flapping, echolalia, and obsessive / repetitive actions. Even though he rarely initiated conversation, he did when he wanting reassurance about something that was making him anxious or when he needed assistance. Academically, he performed best when his instruction included verbal prompting paired with visual cues like picture choices, and when he knew that he was working for planned recreation time once he finished his given assignment. During recreational time, he enjoyed playing bowling on the classroom's Wii video game system, watching videos on the computer, and drawing on a dry erase board. KF had used video modeling in a previous study in order to learn how to play a video game, but he had no previous experiences with video based art lessons.

Student 3: EB was a 17-year-old male student diagnosed with ASD at the age of three using both the Gilliam Autism Rating Scale (GARS) and The Autism Developmental Observation Schedule (ADOS). EB was a very friendly student who interacted more with adults then his peers, most often asking them the definitions of words that he didn't understand that were associated with his echolalic behaviors. Even though EB was very high functioning he would become extremely upset when he answered a question incorrectly or if other students said certain words aloud. When he became agitated and upset he would hit himself in the head, rip his clothing, pull his hair, poke himself with pencils, and other negative self-inflicting behaviors. To calm him down his teachers would joke around with him and play with him. Academically, EB could read at a third grade level and was able to comprehend what he read when he was able to highlight the key points of the passage. If he did not know how to complete his work, he would sit silently without requesting help. EB spent his recreational time researching various topics of interest on the computer such as science fiction characters or monsters. He would also draw detailed characters based on his extensive computer research and vivid imagination, or played the Wii with his peers. EB had taken many traditional visual arts classes during his electives due to his interest in drawing, but he hasn't participated in any video based art instruction. However he was exposed to video modeling in another study which taught students how to play a video game.

Student 4: CM was a 15-year-old male student who was medically diagnosed with ASD at the age of three using the Gilliam Autism Rating Scale (GARS). CM was a highly motivated, very patient, and hardworking student with a great personality. Academically, CM was able to read on grade level with few pronunciation errors. Although his fluency level is on grade level he has difficultly with comprehension of the text, on a very basic level. CM could successfully complete single digit addition and subtraction problems independently, and was able to pay for items up to $200 using the Next Dollar strategy. CM was able to complete work in an individual and small group setting, with limited distractions. CM possibly would slap, kick, or run when

over stimulated or upset, he would also scream, use profanities, or put non-edible items in his mouth but when given deep pressure on his joints, legs, or forehead, he was easily redirected. Beyond the use of echolalia behaviors, he would use "yes" or "no" for most of his communication needs, unless he was prompted to use complete sentences when requesting something. For recreation at school, CM enjoyed playing games or watching videos on the computer, looking at pictures on his teacher's or general education peer's phones, and calmed himself by writing dates and times to specific events that he researched on the internet. CM was enrolled in a traditionally art class, but hasn't been involved in any type of video based instruction prior to this study.

Student 5: DG was a 16-year-old male student who was diagnosed with ASD at the age of three using the Gilliam Autism Rating Scale (GARS). DG had developed a fondness for the hallway outside of the FMD classroom and could usually be spotted there working on a tablet computer with student aids. This was a highly preferred location and he would only come into the classroom when a preferred activity was occurring, when prompted, and during required work times. DG handled the transitions between classes in the hallway very well, as he watched his general education peers travel to and from their classes. DG was working on entering more parts of the building and talking with unfamiliar people at school because he tended to be anxious or scared in new environments. He would often express frustration or displeasure by initially burping, but could quickly escalate to removing his clothes, hitting, kicking, spitting, biting himself, hitting his head and body against objects, or throwing things. Because of this, he required constant immediate adult supervision for safety in new environments. Academically, DG was able to read a range of approximately 70 sight words, was capable of counting to 10, paying for items up to $10 using the Next Dollar strategy, and telling time to the half hour. Even though he had the ability to write neatly, he generally was unwilling to write. DG continued to require significant adult support and verbal redirection to engage in large or small group activities. For recreation, at school, DG enjoyed being with a preferred peer, resting in the

hallway, walking outside in warm weather, and playing on the iPad tablet computer. He had been exposed to traditional art classes previously, but had not participated in any video based instruction.

Student 6: AC was a16-year-old male student who was medically diagnosed with ASD using the Gilliam Autism Rating Scale (GARS) at the age of three. AC was very personable and pleasant, appearing happy most of the day. He was aware of authoritative figures and what he should and should not do, but occasionally he was unable to control his behaviors. Observed during the course of the study, he had become upset when he lost preferred items. He would search for the lost item frantically, and then start hitting himself and act as though he might hit an adult if the item was not found. Academically, AC was able to perform math problems on a second grade level, using a calculator to solve 3-4 number addition and subtraction problems. Based on the San Francisco Quick Reading Assessment, AC could read on a 1st grade level, and had difficulties when reading passages that contained unfamiliar words. During recreational times, AC would read, socialize with others, watch movie clips on the computer, or play the classroom's Wii video game system. AC had taken traditional visual arts classes during his electives, but he had not participated in any video based instruction before participation in this study.

Student 7: JW was a 20-year-old male student who was medically diagnosed with ASD using the Gilliam Autism Rating Scale (GARS) at the age of three. Because he was in his last year of eligibility to receive public school services, JW received vocational job training and worked with a job trainer, working at various locations for a majority of the school day. Beyond his echolalic behaviors, he rarely initiated conversation or asked for what he needed, choosing instead to sit quietly until a prompt was given. During the study, JW had shown little growth academically and waited for a prompt to be given before responding. Once finished with one task, he would wait silently until another prompt was given. Because of this, during the first set

of interventions, modifications were made in order to match JW's current academic levels, and he received the interventions into modified segments and steps that were given one at a time. When JW was waiting to be prompted he would engage in repetitive behaviors such as rocking in his chair or chewing on a rubber hose. When he did not have his rubber hose he would choose to chew on his fingers until they bleed without any reaction of pain. During his recreational times, he would watch videos on his laptop computer. JW had never been exposed to video based art lessons prior to the study. Even though modifications were made to the study to give JW a chance to succeed, he was unable to complete this research due to his irregular attendance.

Staff included a male art education teacher who served as the study's primary researcher and a female special education teacher who served as a secondary researcher. The art education teacher was certified to teach art to all students' kindergarten through twelve grade, worked with students with ASD as a Paraeducator prior to the study, and had 3 years of experience; he collected intervention data. The special education teacher was certified to teach students with moderate to severe disabilities (MSD), including students with ASD, and had 5 years of experience; she collected intervention data. At both study locations, paraprofessionals that were trained in data collection procedures collected reliability data.

## Test Instruments

Video clips of a visual art based lesson that had been constructed by the primary researcher were accessed on YouTube and watched by students on a projector screen, computer, or tablet. The primary research filmed the video based lessons from the first person perspective, meaning that the viewer could only see the model's hands completing the task. The primary researcher acted as both the model and the narrator. The video lessons were filmed using an iPad and were edited using iMovie software. The video lessons covered three targeted content areas: painting, drawing, and ceramics. The video lessons presented the content information through the

use of full page slides then demonstrated the proper techniques in those three distinct art areas. The slides were made in Microsoft Power Point and printed in color on white paper. The words on the slides were read word for word. To maintain consistency between the video lessons and traditional in vivo lessons, each lesson would follow a script and lesson plan in order that the same information is presented in both intervention formats. Researchers teaching through the traditional in vivo method would follow the script to ensure that the same information was presented and the same steps were followed through both teaching methods. If needed, participants were given a social narrative before each art lesson to prepare them for work and provide them with a schedule of what will happen next.

In the painting video lesson, information covered color theory and the color wheel, with modeling of how to create a color wheel. To complete the color wheel, by combining the three primary colors to create three secondary colors. The participant was presented with a color wheel worksheet, three paint brushes and a plate with blue, red, and yellow paint on it. To complete the color wheel, they had to paint the labeled boxes on the color wheel with their corresponding colors. After painting the three primary colors, they had to mix two colors to create a secondary color, and then paint it in the correct box. The participants mixed the primary colors to create the three secondary colors of green, violet, and orange. In the drawing lesson, information was presented on value, value scales, and the artist M.C. Escher, with modeling of how to create a cross hatched value scale. The participant was given a blank value scale and a pencil. To complete the value scale, participants matched the value scale drawing increasing layers of lines as the scale progressed, using the cross hatching technique. In the ceramic video lesson the information that was included covered the history of ceramics, with modeling of how to create a pinch pot. The participants were presented with modeling dough and given the task of creating their pinch pot. To complete the pinch pot the participants needed to follow the steps that were presented during the lesson. See attached worksheets and lesson documents in Appendix A-C.

All sessions took place in a general education art classroom with the primary researcher or in a special education resource classroom with the secondary researcher. To ensure consistency and reduce irrelevant stimuli, participants received instruction in groups of two. No other participants were present during instruction. Lessons were designed to be completed in less than 20 minutes, with video lessons lasting from 4-6 minutes

## Hypothesis

1. When students diagnosed with ASD receive a visual art video based instruction, they can demonstrate higher levels of developing artistic skills with greater success, over traditional in vivo teaching methods.
2. When students diagnosed with ASD receive a visual art video based instruction, they can demonstrate higher levels of retaining art content knowledge with greater success, over traditional in vivo teaching methods.
3. The traditional in vivo method will show no significant improvement when compared to the same lesson through video teaching methods.

From the information found in the review of literature and observations over my career, the results of this study may be successful based on the numerous studies that have been done which show the positive gains from using video modeling as a form of instruction with participants with ASD (Bellini & Akullian, 2007; Carpentieri & Morgan, 1996; Charlop-Christy, Le, & Freeman, 2000; Nikopolous, Canavan, & Nikopolous-Smyrni, 2009; Nikopolous & Keenan, 2004; Shipley-Benamou, Lutzker, & Taubman, 2002; Sherrow, Spriggs, & Knight, 2012). Participants diagnosed with ASD have also shown a strong connection to creating art because it appeals to their strengths in visual stimuli, which gives this research a greater chance for success.

## Data Collection

The art lessons presented information about the history and techniques used in ceramics, painting, and drawing. This information was measured using a pre-test and post-test, which was given prior and following the intervention to measure the acquisition of knowledge. Researchers used a task analysis to collect data. For a correct independent response, the teacher would record a plus sign in the column for a correct response of the completion of the step as students created their projects. If the participant completed it incorrectly or did not complete the step within 15 seconds, a minus sign would be recorded, and the student would be stopped for that lesson. See attached data sheets in Appendix A-C.

## Design

An Adapted Alternating Treatment Design (Gast & Ledoford, 2010) was used to determine if video based instruction was more effective or efficient in teaching students with ASD specific artistic skills and content knowledge. This design is a type of single subject research where the participant acts as their own control group through baseline data testing collected prior to exposure to alternating treatments. Adapted Alternating Treatment Designs require the rapid alternation of two or more distinct treatments to evaluate the effects on two functionally equivalent behaviors. Once the most effective treatment is determined, the researcher can apply the most effective treatment to a third functionally equivalent behavior to further demonstrate experimental control. Baseline data was collected prior to the interventions to evaluate the effectiveness of the treatments.

Participants received both interventions through traditional in vivo art teaching and video art teaching on alternating days. After reaching mastering, the participants continued the study in the method that showed the greatest effectiveness in order to validate the results. This baseline

data collected before the intervention was used to evaluate the effectiveness of the treatment to see which teaching method had a greater effect. Sessions took place during the participants' Art, Study Skills, and Vocational Skills classes.

## Procedure

**General Procedures.** Prior to receiving instruction in the content areas, participants were probed for baseline data to measure their knowledge of content and ability to create the art product. During baseline data collection, the teacher provided the task direction to complete the content quiz and create the art product. Baseline sessions ended after the first error or if the participant did not respond within 15 seconds. The teacher did not provide specific praise for correct responses. General verbal praise was given at the termination of the session regarding the participant's effort. Each participant was probed for three to five sessions in the three content areas. Intervention began after the data stabilized. For intervention, participants were randomly placed into counterbalanced alternating treatment schedules. Participant group 1 received video painting lessons and traditional in vivo drawing lessons. Participant group 2 received video drawing lessons and traditional in vivo painting lessons. Participants received both lessons until they had shown mastery in creating a completed product from one of the intervention methods. Mastery was defined as reaching 80% completion of independently and accurately completed the steps in the task analysis data sheet. The sessions ended after the first error or no response within 15 seconds. If participants did not show progress after 5 sessions, the intervention was modified by breaking the video lesson or traditional in vivo lesson into smaller segments. The steps to create the art product were given one at a time with an opportunity to complete that step before moving on to the next step. For example, during video intervention, the video was paused in between steps and the participant had the opportunity to complete the step. In the traditional in

vivo instruction, the teacher paused after reading a step in the task directions and allowed the participant the opportunity to complete that step.

Once participants showed mastery in one of the intervention methods, they completed the post-test for that content area, and then moved on to ceramics instruction. Participants who reached mastery first in the video modeling received ceramics instruction through video modeling. Likewise, participants who reached mastery first during traditional in vivo lessons received ceramics instruction through the traditional in vivo lesson. Participants received the ceramic lesson daily until they reached mastery. Mastery was defined as reaching 80% through the task analysis data sheet. Participants then took the post-test for ceramics to test for content knowledge gained during intervention. Once all data had been collected with each participant, research testing concluded, and the data was analyzed.

**Pre and Post Test**. Participants completed a pre-test in order to test what art content knowledge they knew in the three subjects that were taught; drawing, painting, and ceramics. The researcher assisted the participants in reading the questions if necessary. Once participants showed mastery in creating the art example, they took the post-test for that lesson. See attached pre and post tests in the Appendix A-C.

**Baseline**. The participants acted as their own control group through baseline data testing before placement in alternating treatment groups. Prior to receiving any instruction, participants were asked to create the three art products; value scale, color wheel, and pinch pot. Baseline data collection took place for three to five sessions, until data points stabilized. Data from art products were collected on a task analysis data sheet. This data was used to show how participants developed art skills through the interventions.

**Traditional In Vivo Intervention.** During this intervention, the participants observed the presentation of the lesson by the researcher. The researcher presented the art content

knowledge and then demonstrated how to create the art project step by step. To ensure that the video and traditional in vivo methods followed the same steps, researchers read from the same script used in the video lesson. See attached scripts in Appendix A-C. After the lesson, the participants received the materials and were given a task direction to complete the art project. During the completion of the art products, researchers did not provide prompts or specific verbal praise for accuracy. If needed, they did provide attentional cues to remain on task and complete the assignment.

**Video Intervention**. During this intervention, participants watched the video lesson, which presented the same material as the traditional in vivo method, on a projector, computer, or tablet. After watching the video lesson, the participants were given the materials and asked to complete the art project. Similar to the traditional in vivo instruction, no prompts or specific praise were provided, only attentional cues as needed to complete the task.

**Final Probe**. After the conclusion of the interventions in the three content areas through reaching mastery, participants were given the task direction to create the three art products a final time. They did not receive any instruction prior to the opportunity to complete the task. Data was collected according to the task analysis data sheet. This data was used to evaluate if participants maintained the art skills acquired during the interventions.

## Reliability

To enhance reliability of data, procedural reliability and interobserver agreement were recorded during all three conditions of the study: baseline, intervention, and final probes. Social validity questionnaires were not created for this study.

A trained observer recorded procedural reliability data to measure the treatment fidelity of both the primary and secondary researchers' behavior. The observer used a checklist of five

teacher expected behaviors. The behaviors included: teacher had materials prearranged, teacher played the video or read from the script, teacher provided only attentional cues, teacher didn't give prompts, teacher stopped participant at the first error. Procedural reliability was calculated by dividing the total number of observed behaviors by the total number of expected behaviors multiplied by 100% (Gast & Ledford, 2010). Procedural reliability was recorded during 50.4% of the sessions. Procedural reliability agreements for this study were 99.75%. See attached procedural reliability data sheet in the Appendix H.

Interobserver agreement was only collected on three participants. Two paraeducators were trained to observe data collection procedures to ensure accuracy of data collection on the participant's behavior. The researcher and observer used identical data collection sheets simultaneously to record the participant's completion of steps to ensure the agreement in data. Interobserver agreement was collected in 20% of sessions across all participants. Agreement was determined by dividing the number of agreements by the number of agreements plus disagreements multiplied by 100% (Gast & Ledford, 2010). Within those sessions, agreement across all participants in all conditions was 98.5%.

# Chapter Four: Results

This research study was intended to find the effect when it came to teaching art to students with ASD through video based instruction. Because students diagnosed with ASD have shown that they have a strong connection to creating art and video modeling teaching strategies, it was predicted that this study would have a high success rate with the following hypotheses:

1. When students diagnosed with ASD receive a visual art video based instruction, they can demonstrate higher levels of developing artistic skills with greater success, over traditional in vivo teaching methods.
2. When students diagnosed with ASD receive a visual art video based instruction, they can demonstrate higher levels of retaining art content knowledge with greater success, over traditional in vivo teaching methods.
3. The traditional in vivo method will show no significant improvement when compared to the same lesson through video teaching methods.

To determine the results of these hypotheses a task analysis data sheet was used to collect data when students created each lessons art example; color wheel, value scale, and pinch pot. A pre-test and post-test was also given to see what art content knowledge was learned during the interventions. The data collected indicated that, in general, video based art instruction is an effective method when teaching students with ASD art. In addition, other results were observed that can't rule out the significance of traditional in vivo teaching methods. These mixed results and differing variable between study locations, researchers, study design, and the students themselves will be discussed further in the discussion chapter.

## Hypothesis 1: When students diagnosed with ASD receive a visual art video based instruction, they can demonstrate higher levels of developing artistic skills with greater success, over traditional in vivo teaching methods.

Student 1: Prior to the intervention, CB mastered painting the color wheel in each baseline testing session scoring a 100% each time she completed it. Even though she had already mastered the creation of the color wheel, she was still given the invention to see if she could improve her art content knowledge with the pre and post test results. In baseline testing CB scored a 0% average on both the value scale and pinch pot. During the intervention CB mastered the video painting lesson in the first attempt, as expected. She mastered the traditional in vivo drawing lesson in the second attempt. She was given the third ceramic lesson via video based instruction since she mastered video painting first. In the ceramic lesson CB, mastered creating a pinch pot in the first attempt. After the intervention, in the final probes used to test what students maintained without the invention being given CB scored an average of 100% over three sessions on each of the art examples. CB did show that she could reach mastery level faster through video based instruction and her results support the hypothesis, but there were no significant gains from the video lessons over traditional lessons. Results for CB can be found in Table 1a and Figure 1.

Student 2: KF was exposed to baseline testing three times before being exposed to the intervention. KF scored a 40% average on the color wheel, averaged a 0% when creating the value scale, and a 3% average when creating a pinch pot. During the Intervention KF mastered the video painting lesson in the first attempt. He mastered the traditional in vivo drawing lesson in the fourth attempt. Since he mastered the video painting lesson first, he was given the final ceramic lesson through video based instruction. In the ceramic lesson KF mastered creating a pinch pot in the fourth attempt. During the final probes, given without the invention of video or traditional teaching, KF scored positive results showing that he had maintained each of the art skills. KF scored an average of 100% over three sessions when creating the color wheel, an 84%

average when creating the value scale, and a 92% average for the pinch pot. KF did show that he could reach mastery level and develop artistic skills faster through video based instruction, thus supporting the hypothesis. Results for KF can be found in Table 2a and Figure 2.

Student 3: During baseline testing EB scored a 0% average when creating the value scale, but averaged a 40% in the color wheel and a 16% average when creating a pinch pot. During the intervention EB mastered the traditional in vivo painting lesson in the first attempt. He mastered the video drawing lesson in the 8th attempt. Because he mastered traditional painting first, he was given the third ceramic lesson via traditional in vivo instruction. In the ceramic lesson EB, mastered creating a pinch pot in the first attempt. After the intervention, in the final probes used to test what students maintained without the invention being given EB scored an average of 100% over three sessions on each of the art examples. EB showed that he could reach mastery level faster through traditional in vivo instruction, and showed a noteworthy gap in reaching mastery between video lessons and traditional in vivo lessons. EB's results do not support the hypothesis. Results for EB can be found in Table 3a and Figure 3.

Student 4: CM was exposed to baseline testing five times before being exposed to the intervention. CM scored a 10% average on the color wheel, averaged a 32% when creating the value scale, and a 14% average when creating a pinch pot. During the intervention CM mastered the video painting lesson in the first attempt. He mastered the traditional in vivo drawing lesson in the third attempt. Since he mastered the video painting lesson first, he was given the final ceramic lesson through video based instruction. In the ceramic lesson CM mastered creating a pinch pot in the second attempt. After the intervention, in the final probes used to test what students maintained without the invention being given CM scored encouraging results showing that he had retained the taught art skills. CM scored an average of 100% over three sessions when creating both the color wheel and pinch pot. He scored an 82% average over three sessions

when creating the value scale. CM did show that he could reach mastery level faster through video based instruction, and supported the hypothesis. Results for CM can be found in Table 4a and Figure 4.

Student 5: DG was exposed to baseline testing five times before being exposed to the intervention. DG scored an 8% average when creating the value scale, averaged a 40% in the color wheel, and a 13% average when creating a pinch pot. During the intervention DG mastered the video painting lesson in the first attempt. He mastered the traditional in vivo drawing lesson in the second attempt. Because he mastered video painting first, he was given the third ceramic lesson via video based instruction. In the ceramic lesson DG, mastered creating a pinch pot in the sixth attempt. After the Intervention, in the final probes used to test what students maintained without the invention being given DG scored very mixed results. DG scored an average of 95% over three sessions when creating his color wheel. Over three sessions, he scored a 32% average when creating the value scale and a 25% average when creating a pinch pot. DG did show that he could reach mastery level faster through video based instruction, and supported the hypothesis, but showed no significant data gaps when comparing both video and traditional in vivo instruction. Results for DG can be found in Table 5a and Figure 5.

Student 6: During baseline testing AC scored a 35% average when creating the value scale, averaged a 16% in the color wheel, and a 19% average when creating a pinch pot over five sessions. During the intervention AC mastered the traditional in vivo painting lesson in the first attempt. He mastered the video drawing lesson in the fifth attempt. Because he mastered traditional painting first, he was given the third ceramic lesson via traditional in vivo instruction. In the ceramic lesson AC, mastered creating a pinch pot in the third attempt. After the intervention, in the final probes used to test what students maintained without the invention being given AC scored an average of 100% over three sessions when creating the color wheel and pinch

pot. AC averaged a 96% during the value scale final probe sessions. AC did not support the hypothesis, as he presented better results for traditional in vivo teaching methods. Results for AC can be found in Table 6a and Figure 6.

From the mixed results in creating the different art examples, there is not enough data to support the hypothesis that when students diagnosed with ASD receive a visual art video based instruction, they can demonstrate higher levels of developing artistic skills with greater success, over traditional in vivo teaching methods. The data did however show that video based instruction was successful for some students, but there were no significant gaps that pointed to video based instruction as being a superior method.

## Hypothesis 2: When students diagnosed with ASD receive a visual art video based instruction, they can demonstrate higher levels of retaining art content knowledge with greater success, over traditional in vivo teaching methods.

Student 1: CB showed mixed results when it came to showing what art content knowledge she was able to retain from the interventions. For the video lessons, CB went from a 20% pre-test score to a 10% post-test score in the painting lesson. During the other video lesson on ceramics, CB showed positive gains, going from a 42% pre-test score to a 100% post-test score. CB did show improvement in the traditional in vivo drawing lesson as well going from a 50% pre-test to a 100% post-test. Because of CB's mixed results, she did not support the hypothesis. Results for CB can be found in Table 1b.

Student 2: KF showed improvements in each of his post-tests scores over his pre-tests, in both traditional in vivo and video interventions. For the painting lesson, which was given through video, he improved from a 10% pre-test score to a 20% post-test score. In the other video lesson, ceramics, KF showed positive gains again going from a 56% pre-test score to an

86% post-test score. KF also showed advances in the traditional in vivo drawing method going from a 38% pre-test score to a 75% post-test score. Because KF showed improvements in both intervention methods, his results did not support the hypothesis. Results for KF can be found in Table 2b.

Student 3: EB showed improvements in two out of the three tests given. In the third test, his score remained the unchanged. EB went from a 10% pre-test score to a 67% post-test score in the painting lesson, which he received through traditional in vivo lessons. For the video lesson, he went from a 38% pre-test score to a 50% post-test score in the drawing lesson. The third test, which was the traditional in vivo ceramic lesson, EB's score remained the same at 72%. Because of these results which showed no noteworthy improvements from the video lessons, EB did not support the hypothesis. Results for EB can be found in Table 3b.

Student 4: CM also showed improvements in each of his post-tests scores over his pre-tests, in both traditional in vivo and video intervention methods. For the painting lesson, which was given through video, he improved from a 40% pre-test score to a 90% post-test score. In the other video lesson, ceramics, CM showed positive improvements again going from a 14% pre-test score to a 71% post-test score. CM displayed his greatest advancement in the traditional in vivo drawing method going from a 0% pre-test score to a 62% post-test score. CM's result did not support the hypothesis because he showed improvements in each lesson and the lessons given through video based instruction did not produce significant gains. Results for CM can be found in Table 4b.

Student 5: DG showed mixed results as well when it came to showing what art content knowledge he was able to retain from the lessons. For the video painting lesson, he went from a 0% pre-test score, which he got after refusing to take the pre-test on three different occasions, to a

30% post-test score. During the other video lesson on ceramics, DG showed negative results, going from a 71% pre-test score to a 42% post-test score. DG didn't show improvement in the traditional in vivo drawing lesson attaining a score of 87% for both the pre-test and post-test. Because of DG's negative post-test score in the video ceramic lesson, his results did not support the hypothesis. Results for DG can be found in Table 5b.

Student 6: AC showed improvements in two out of the three tests. In the third test, his score remained unchanged. AC went from a 10% pre-test score to a 30% post-test score in the painting lesson, which he received through traditional in vivo lessons. For the video lesson, he went from a 25% pre-test score to a 40% post-test score in the drawing lesson. The third test, which was the traditional in vivo ceramic lesson, AC's score remained the same at 14%. Because of these results which showed no notable improvements in the video lesson, AC did not support the hypothesis. Results for AC can be found in Table 6b.

The second hypothesis, when students diagnosed with ASD receive a visual art video based instruction, they can demonstrate higher levels of retaining art content knowledge with greater success, over traditional in vivo teaching methods, was unsupported by this research. Even though every student showed growth overall and did gain some art content knowledge, the data did not prove video based instruction to be better when compared to traditional in vivo teaching methods. Only two of the participants displayed negative results and scored lower post test scores, and both of those scores were from lessons given through video based instruction.

## Hypothesis 3: The traditional in vivo method will show no significant improvement when compared to the same lesson through video teaching methods.

After conducting this research, it is very difficult to say that when student were exposed to traditional in vivo teaching methods that they showed no significant improvement when

compared to the video lessons. Every student did benefit and show progress in each lesson, whether it be the traditional in vivo or video intervention method. Many of the students showed greater results with the traditional in vivo teaching methods. For example, EB reached mastery level in his first attempts of the painting and ceramic lessons, which were both given to him through the traditional in vivo method. DG also reached the mastery level very quickly when he was exposed to the traditional in vivo drawing lesson, reaching mastery in his second attempt. Likewise, AC reached mastery level on the first attempt when creating a color wheel during the traditional in vivo lesson. Out of the 18 pairs of pre and post tests given to gauge what art content knowledge was retained, there were only two scores that showed a decline from pre to post, both of which were from the video intervention method. In every lesson given traditionally scores going from the pre to post tests either remained the same or improved. To further show that the traditional in vivo teaching methods did have a positive impact, a majority of the students did show that they were able to maintain their art making skills in each of the art examples during the final probes, whether exposed to the given lesson traditionally of through video. In contrast to the originally hypothesis, students did show improvement when exposed to traditional in vivo art lessons, causing this hypothesis to be unproven.

Table 1a, Student 1: CB

| Student 1 : CB | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Baseline | | Video | Traditional | Video | | Final Probe | |
| Session | Painting B | Drawing B | Ceramics I | Painting - | Drawing - | Ceramics - | Painting F | Drawing F | Ceramics I |
| 0 | | | | | | | | | |
| 1 | 100 | 0 | 0 | | | | | | |
| 2 | 100 | 0 | 0 | | | | | | |
| 3 | 100 | 0 | 0 | | | | | | |
| 4 | | | | 100 | 4 | | | | |
| 5 | | | | 100 | 100 | | | | |
| 6 | | | | 100 | 100 | | | | |
| 7 | | | | | 100 | | | | |
| 8 | | | | | | 100 | | | |
| 9 | | | | | | 100 | | | |
| 10 | | | | | | 100 | | | |
| 11 | | | | | | | 100 | 100 | 100 |
| 12 | | | | | | | 100 | 100 | 100 |
| 13 | | | | | | | 100 | 100 | 100 |

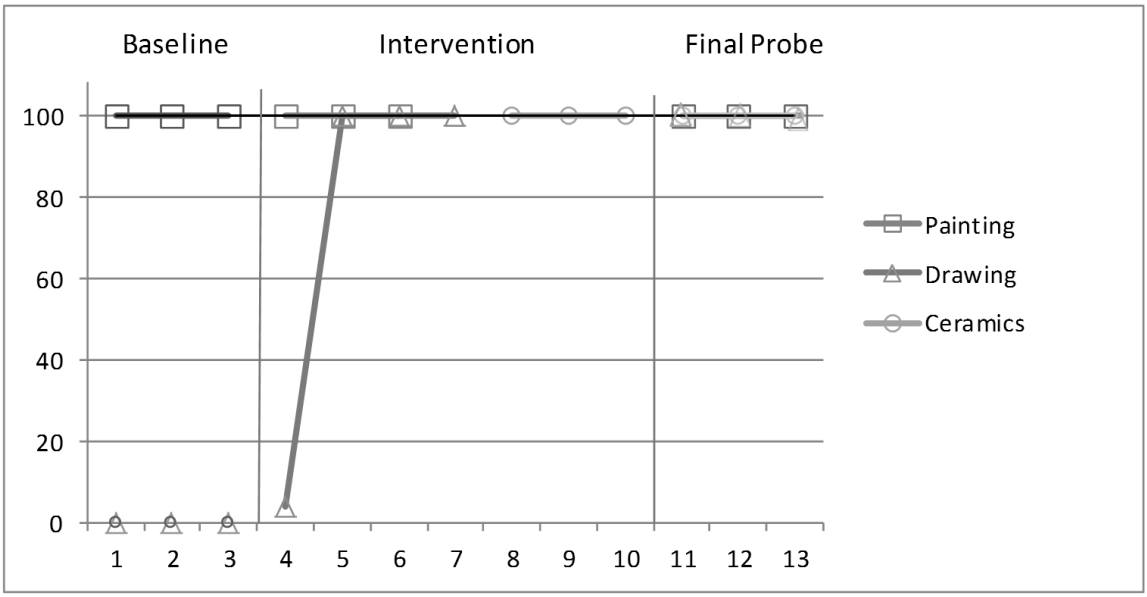



Figure 1a, Student 1: CB Painting, Drawing, and Ceramic Data

Table 1b / Student 1: CB

| | video | traditonal | video |
|---|---|---|---|
| | Painting | Drawing | Ceramics |
| | | | |
| Pre-Test | 20 | 50 | 42 |
| Post-Test | 10 | 100 | 100 |

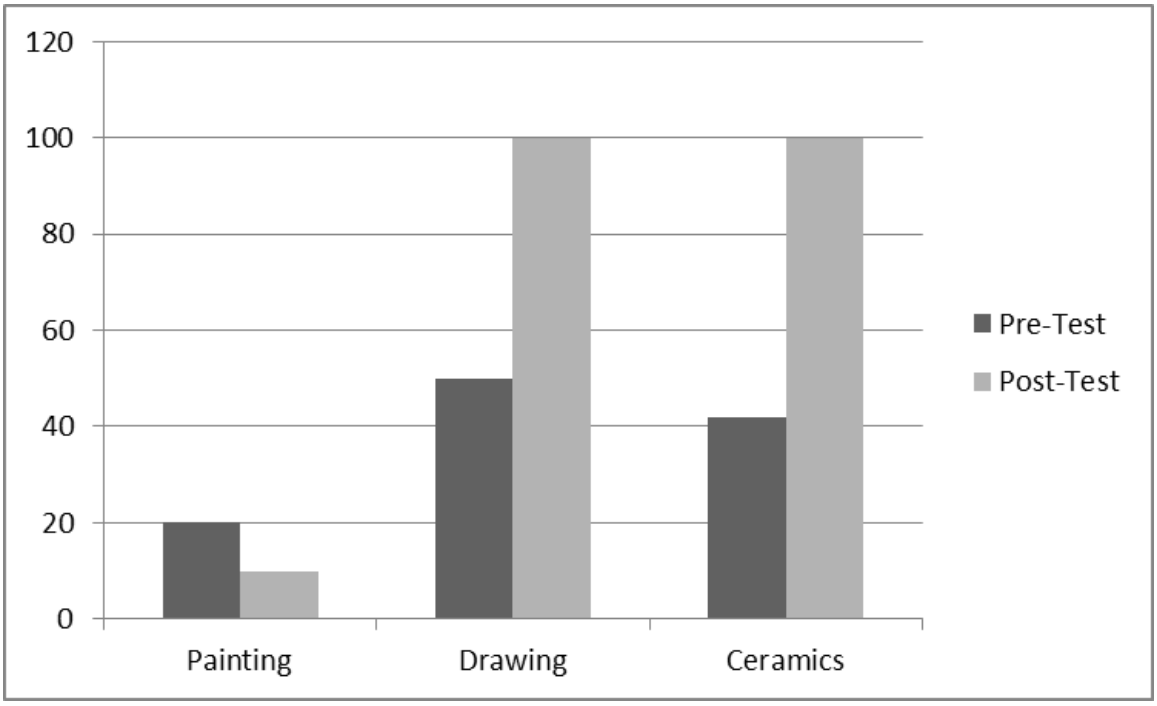



Figure 1b, Student 1: CB Painting, Drawing, and Ceramic Data

Table 2a / Student 2: KF

| Student 2: KF | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Baseline | | video | traditional | video | | Final Probe | |
| Session | Painting B | Drawing B | Ceramics I | Painting -' | Drawing - | Ceramics - | Painting F | Drawing F | Ceramics F |
| 0 | | | | | | | | | |
| 1 | 40 | 0 | 8 | | | | | | |
| 2 | 40 | 0 | 0 | | | | | | |
| 3 | 40 | 0 | 0 | | | | | | |
| 4 | | | | 100 | 32 | | | | |
| 5 | | | | 100 | 32 | | | | |
| 6 | | | | 100 | 32 | | | | |
| 7 | | | | | 84 | | | | |
| 8 | | | | | 32 | | | | |
| 9 | | | | | 32 | | | | |
| 10 | | | | | 84 | | | | |
| 11 | | | | | 32 | | | | |
| 12 | | | | | 84 | | | | |
| 13 | | | | | 84 | | | | |
| 14 | | | | | | 16 | | | |
| 15 | | | | | | 16 | | | |
| 16 | | | | | | 50 | | | |
| 17 | | | | | | 80 | | | |
| 18 | | | | | | 80 | | | |
| 19 | | | | | | | 100 | 84 | 92 |
| 20 | | | | | | | 100 | 84 | 92 |
| 21 | | | | | | | 100 | 84 | 92 |

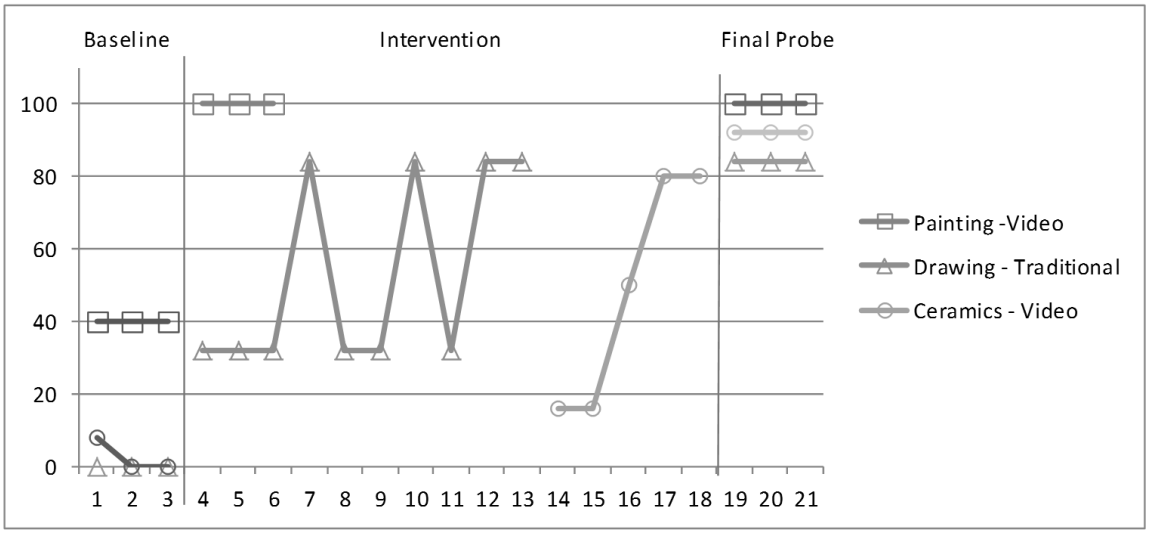



Figure 2a, Student 2: KF Painting, Drawing, and Ceramic Data

Table 2b / Student 2: KF

| | video | traditional | video |
|---|---|---|---|
| | Painting | Drawing | Ceramics |
| | | | |
| Pre-Test | 10 | 38 | 56 |
| Post-Test | 20 | 75 | 86 |

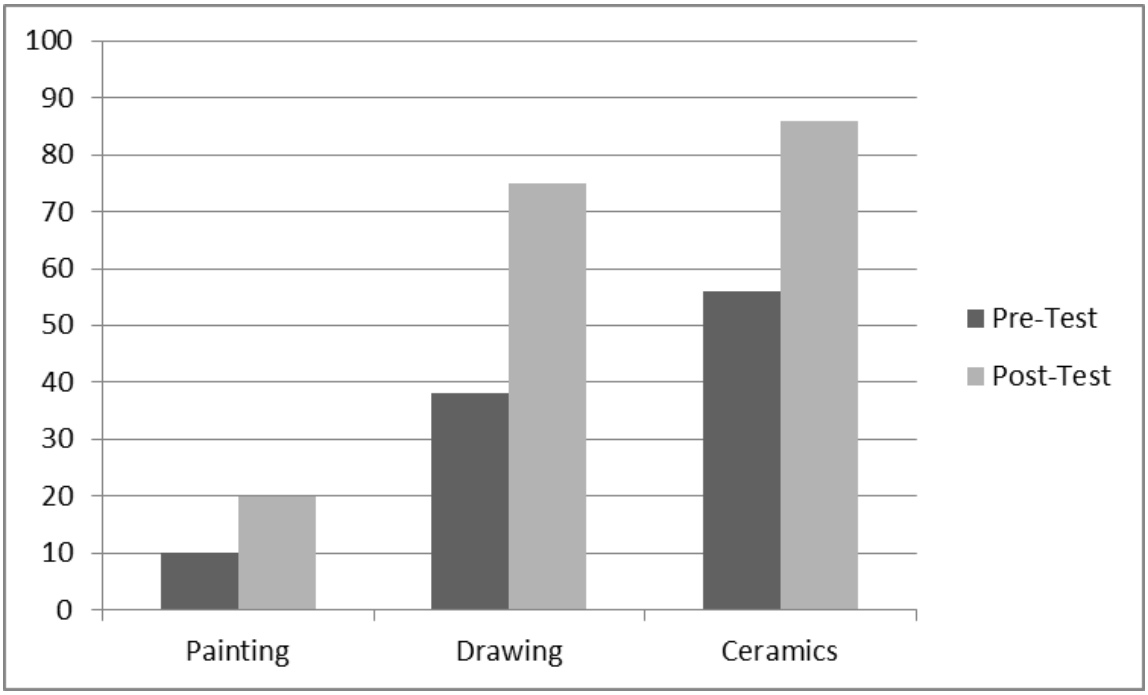



Figure 2b, Student 2: KF Painting, Drawing, and Ceramic Data

Table 3a / Student 3: EB

| Student 3: EB | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Baseline | | traditional | video | traditional | | Final Probe | |
| Session | Painting B | Drawing B | Ceramics I | Painting - | Drawing - | Ceramics - | Painting F | Drawing F | Ceramics F |
| 0 | | | | | | | | | |
| 1 | 40 | 0 | 16 | | | | | | |
| 2 | 40 | 0 | 16 | | | | | | |
| 3 | 40 | 0 | 16 | | | | | | |
| 4 | | | | 80 | 57 | | | | |
| 5 | | | | 100 | 32 | | | | |
| 6 | | | | 100 | 50 | | | | |
| 7 | | | | 43 | 57 | | | | |
| 8 | | | | 100 | 57 | | | | |
| 9 | | | | 100 | 39 | | | | |
| 10 | | | | 100 | 57 | | | | |
| 11 | | | | | 100 | | | | |
| 12 | | | | | 100 | | | | |
| 13 | | | | | 100 | | | | |
| 14 | | | | | | 100 | | | |
| 15 | | | | | | 100 | | | |
| 16 | | | | | | 100 | | | |
| 17 | | | | | | | 100 | 100 | 100 |
| 18 | | | | | | | 100 | 100 | 100 |
| 19 | | | | | | | 100 | 100 | 100 |

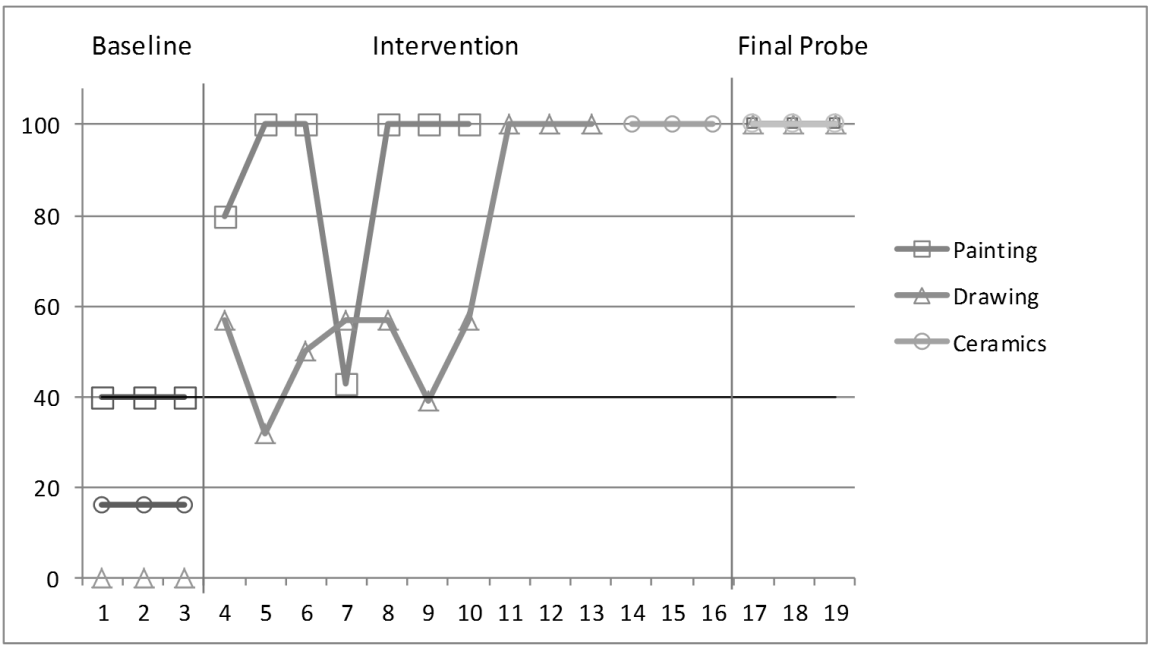



Figure 3a, Student 3: EB Painting, Drawing, and Ceramic Data

Table 3b / Student 3: EB

| | traditional | video | traditional |
|---|---|---|---|
| | Painting | Drawing | Ceramics |
| | | | |
| Pre-Test | 10 | 38 | 72 |
| Post-Test | 67 | 50 | 72 |

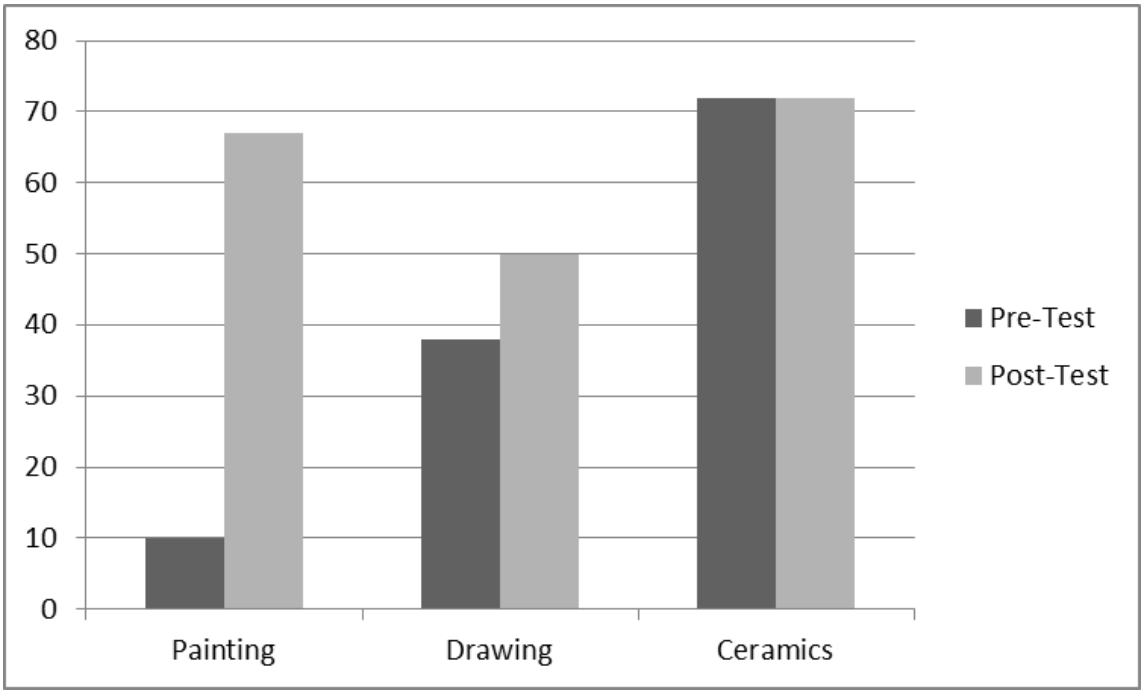



Figure 3b, Student 3: EB Painting, Drawing, and Ceramic Data

Table 4a / Student 4: CM

| Student 4: CM | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Baseline | | video | traditional | video | | Final Probe | |
| Session | Painting B | Drawing B | Ceramics I | Painting - | Drawing - | Ceramics - | Painting F | Drawing F | Ceramics F |
| 0 | | | | | | | | | |
| 1 | 10 | 32 | 16 | | | | | | |
| 2 | 10 | 32 | 16 | | | | | | |
| 3 | 10 | 32 | 8 | | | | | | |
| 4 | 10 | 32 | 16 | | | | | | |
| 5 | 10 | 32 | 16 | | | | | | |
| 6 | | | | 100 | 32 | | | | |
| 7 | | | | 100 | 32 | | | | |
| 8 | | | | 100 | 89 | | | | |
| 9 | | | | | | 16 | | | |
| 10 | | | | | | 100 | | | |
| 11 | | | | | | 70 | | | |
| 12 | | | | | | 83 | | | |
| 13 | | | | | | | 100 | 89 | 100 |
| 14 | | | | | | | 100 | 75 | 100 |
| 15 | | | | | | | 100 | 82 | 100 |

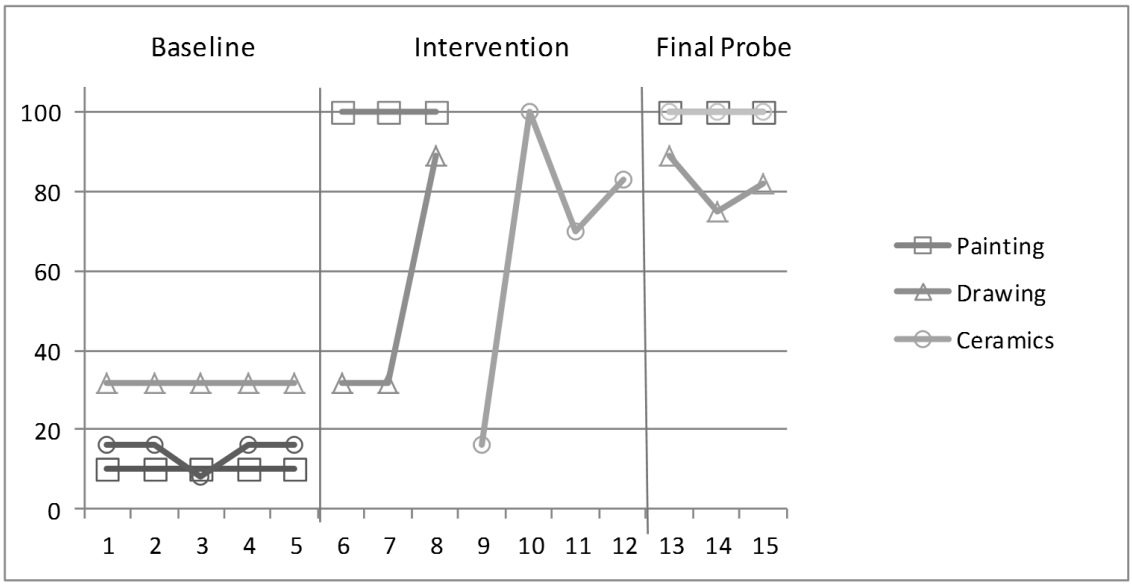



Figure 4a, Student 4: CM Painting, Drawing, and Ceramic Data

Table 4b / Student 4: CM

| | video | traditional | video |
|---|---|---|---|
| | Painting | Drawing | Ceramics |
| | | | |
| Pre-Test | 40 | 0 | 14 |
| Post-Test | 90 | 62 | 71 |

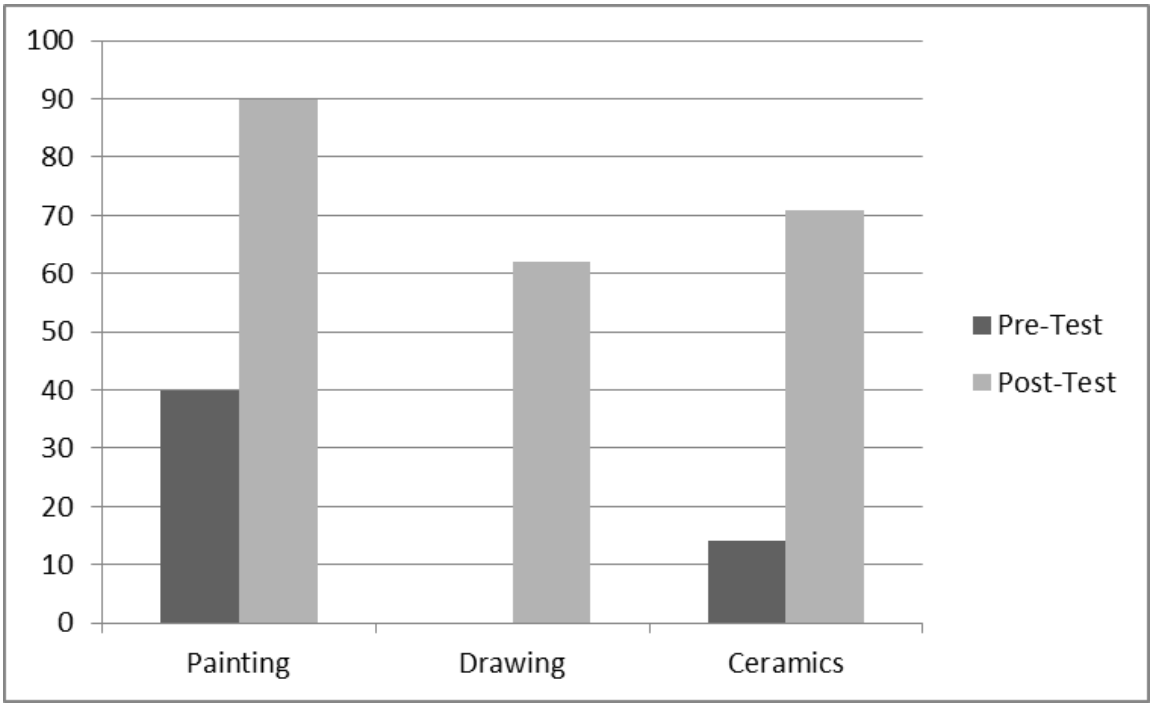



Figure 4b, Student 4: CM Painting, Drawing, and Ceramic Data

Table 5a / Student 5: DG

| Student 5: DG | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Baseline | | video | traditional | video | | Final Probe | |
| Session | Painting B | Drawing B | Ceramics I | Painting - | Drawing - | Ceramics - | Painting F | Drawing F | Ceramics F |
| 0 | | | | | | | | | |
| 1 | 40 | 7 | 0 | | | | | | |
| 2 | 40 | 11 | 8 | | | | | | |
| 3 | 40 | 7 | 16 | | | | | | |
| 4 | 40 | 7 | 16 | | | | | | |
| 5 | 40 | 7 | 25 | | | | | | |
| 6 | | | | 100 | 39 | | | | |
| 7 | | | | 100 | 89 | | | | |
| 8 | | | | 100 | 82 | | | | |
| 9 | | | | | | 33 | | | |
| 10 | | | | | | 33 | | | |
| 11 | | | | | | 33 | | | |
| 12 | | | | | | 33 | | | |
| 13 | | | | | | 33 | | | |
| 14 | | | | | | 89 | | | |
| 15 | | | | | | | 100 | 10 | 33 |
| 16 | | | | | | | 86 | 64 | 25 |
| 17 | | | | | | | 100 | 21 | 25 |

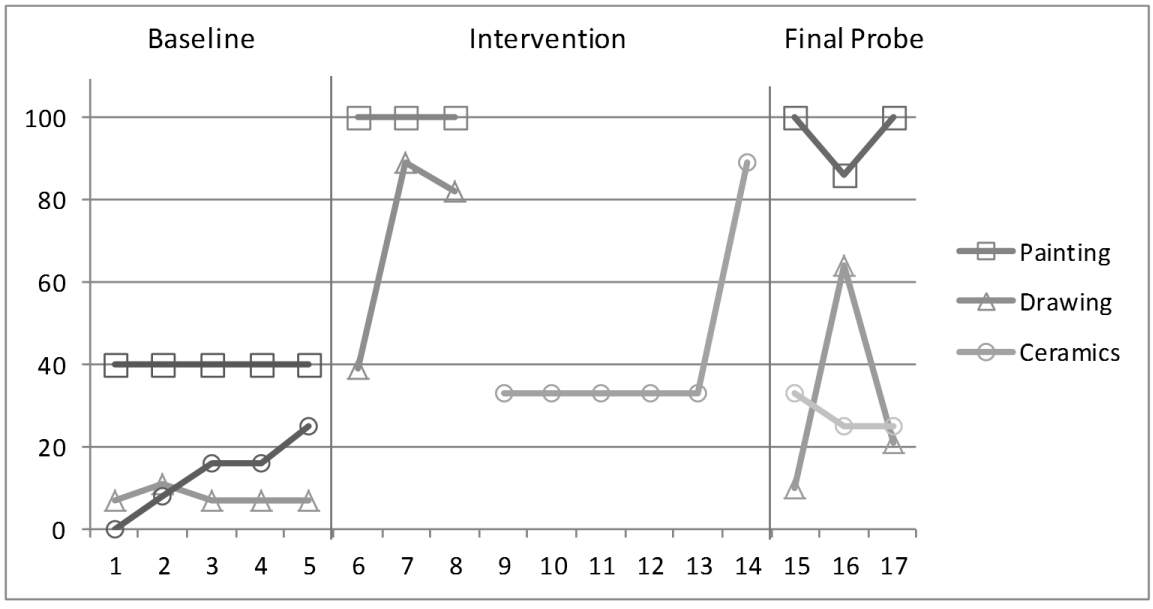



Figure 5a, Student 5: DG Painting, Drawing, and Ceramic Data

Table 5b / Student 5: DG

| | video | traditional | video |
|---|---|---|---|
| | Painting | Drawing | Ceramics |
| | | | |
| Pre-Test | 0 | 87 | 71 |
| Post-Test | 30 | 87 | 42 |

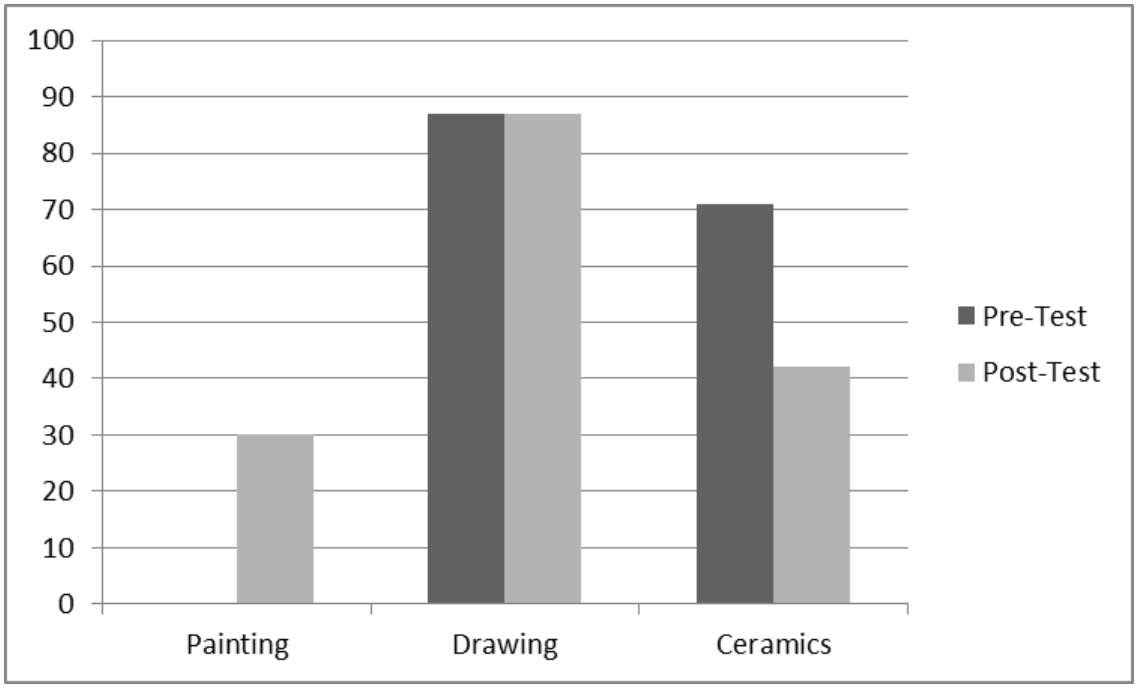



Figure 5b, Student 5: DG Painting, Drawing, and Ceramic Data

Table 6a / Student 6: AC

| Student 6: AC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Baseline | | | traditional | video | traditional | Final Probe | | |
| Session | Painting B | Drawing B | Ceramics I | Painting - | Drawing - | Ceramics - | Painting F | Drawing F | Ceramics F |
| 0 | | | | | | | | | |
| 1 | 10 | 57 | 16 | | | | | | |
| 2 | 40 | 25 | 33 | | | | | | |
| 3 | 10 | 14 | 16 | | | | | | |
| 4 | 10 | 53 | 16 | | | | | | |
| 5 | 10 | 25 | 16 | | | | | | |
| 6 | | | | 80 | 42 | | | | |
| 7 | | | | 100 | 14 | | | | |
| 8 | | | | 80 | 32 | | | | |
| 9 | | | | | 89 | | | | |
| 10 | | | | | | 50 | | | |
| 11 | | | | | | 50 | | | |
| 12 | | | | | | 100 | | | |
| 13 | | | | | | | 100 | 100 | 100 |
| 14 | | | | | | | 100 | 89 | 100 |
| 15 | | | | | | | 100 | 100 | 100 |

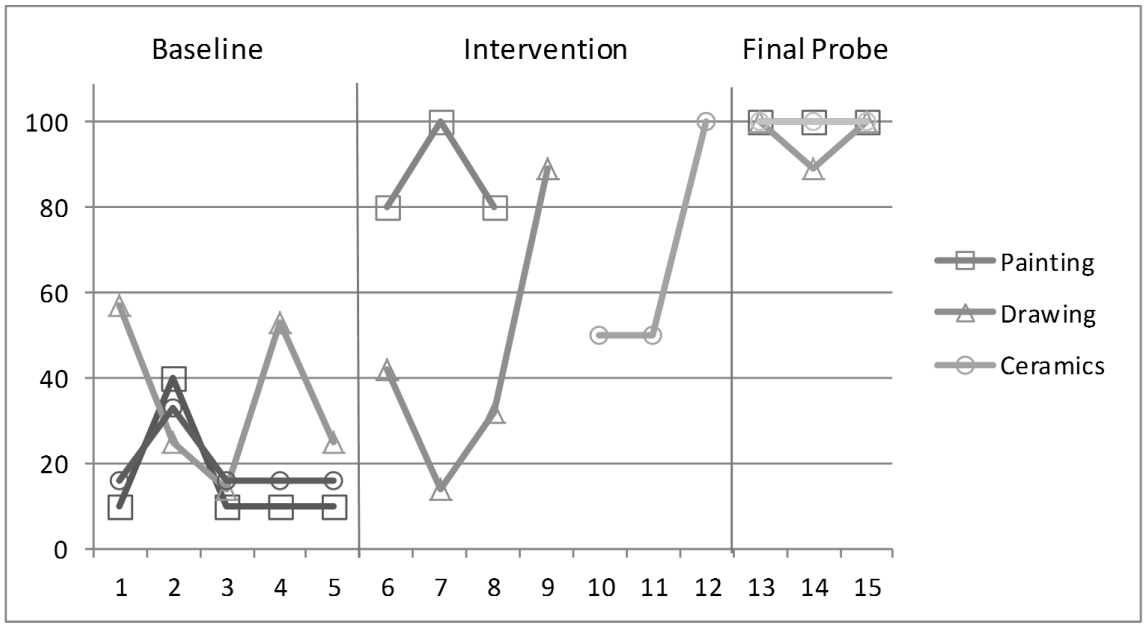



Figure 6a, Student 6: AC Painting, Drawing, and Ceramic Data

Table 6b / Student 6: AC

| | traditonal | video | traditonal |
|---|---|---|---|
| | Painting | Drawing | Ceramics |
| | | | |
| Pre-Test | 10 | 25 | 14 |
| Post-Test | 30 | 40 | 14 |

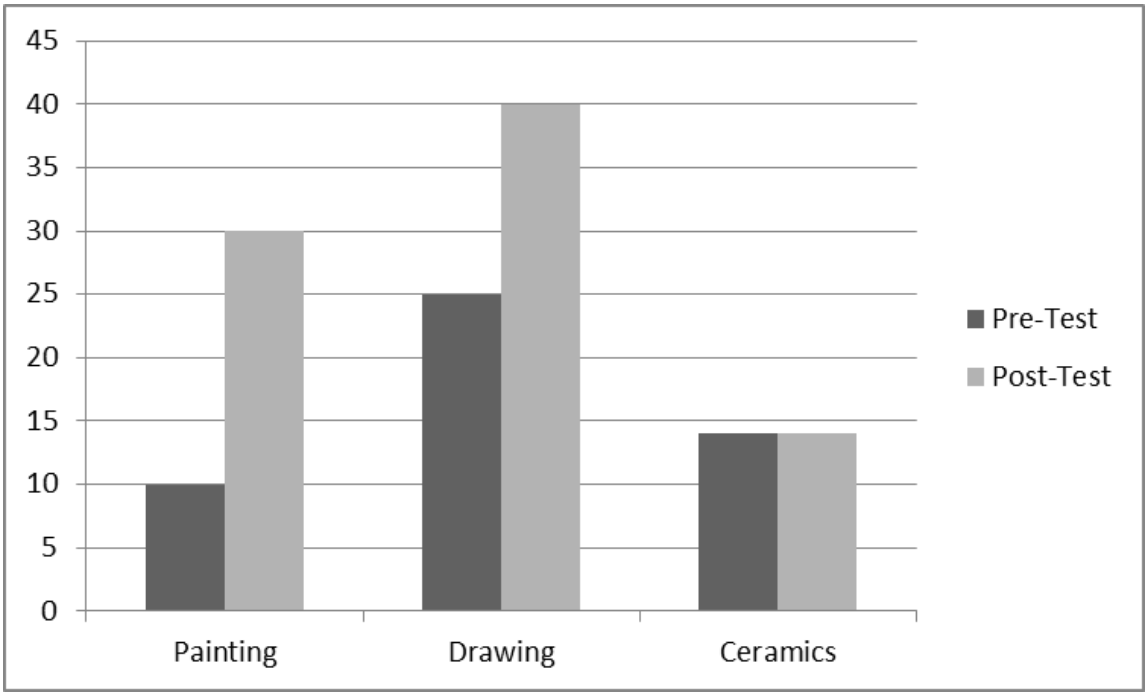



Figure 6b, Student 6: AC Painting, Drawing, and Ceramic Data

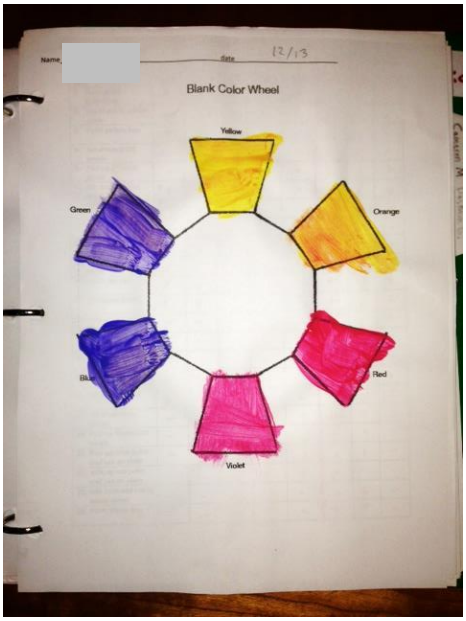



Figure 7a, AC Baseline Color Wheel

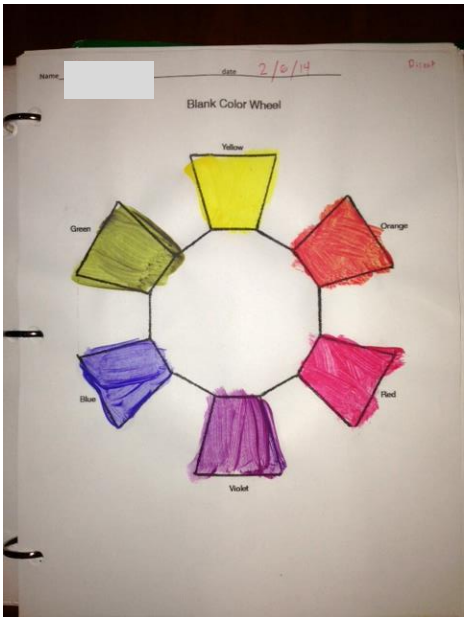



Figure 7b, AC Intervention Color Wheel

Figure 7c, AC Painting

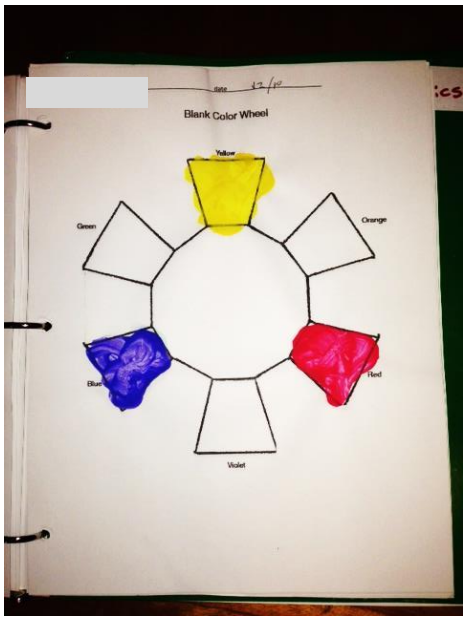



Figure 8a, DG Baseline Color Wheel

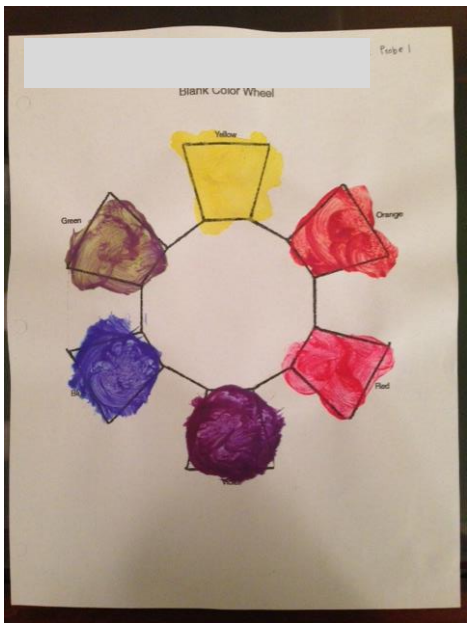



Figure 8b, DG Intervention Color Wheel

Figure 8c, DG Painting

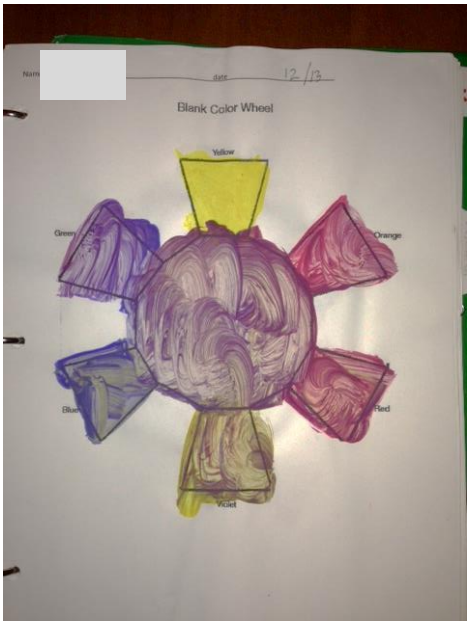



Figure 9a, CM Baseline Color Wheel


Figure 9b, CM Intervention Color Wheel

Figure 9c, CM Painting

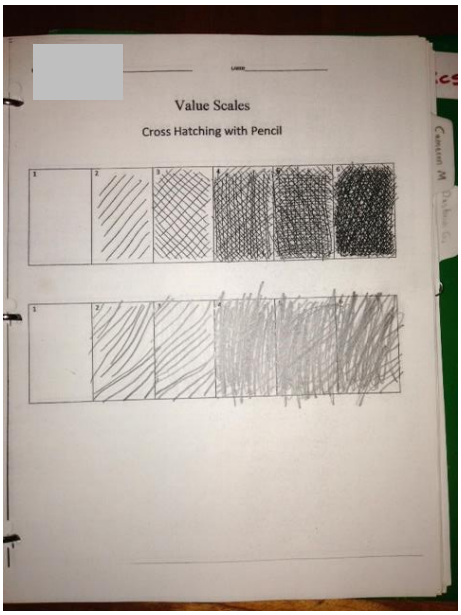



Figure 10a, AC Baseline Value Scale

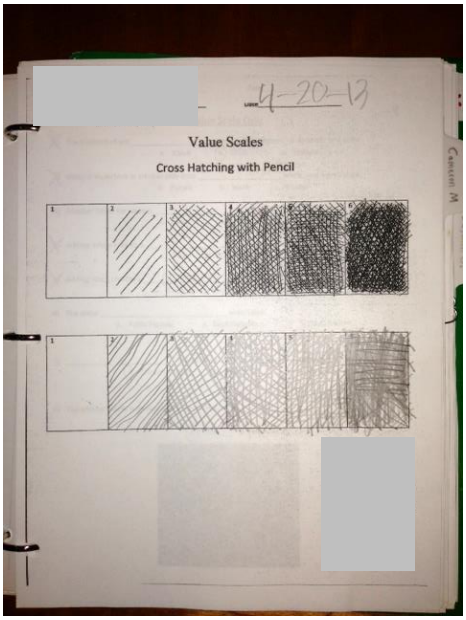



Figure 10b, AC Intervention Value Scale

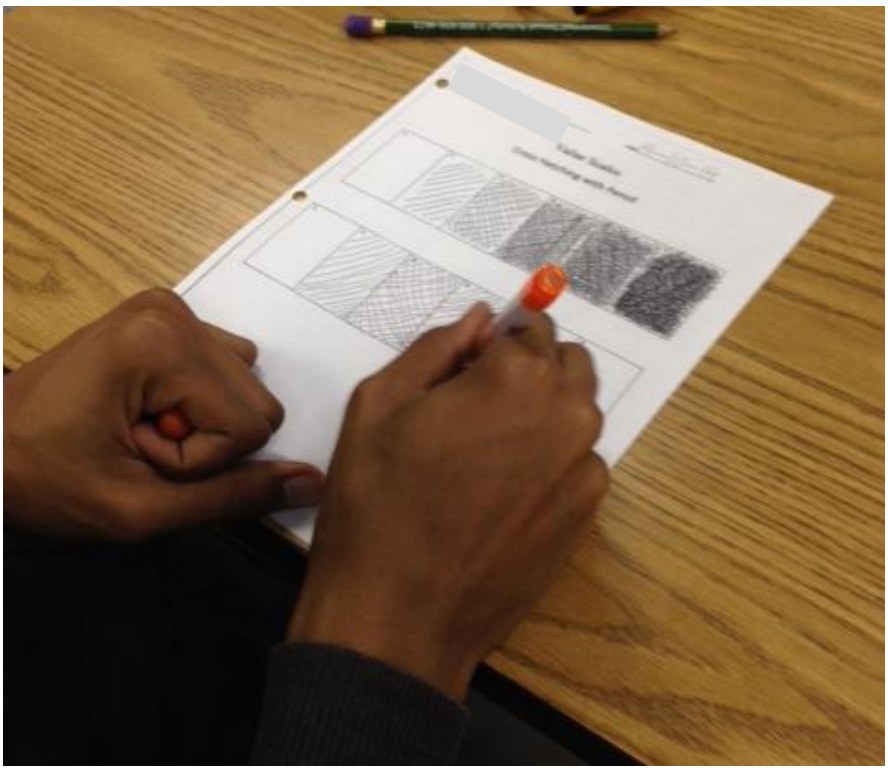


Figure 10c, AC Drawing

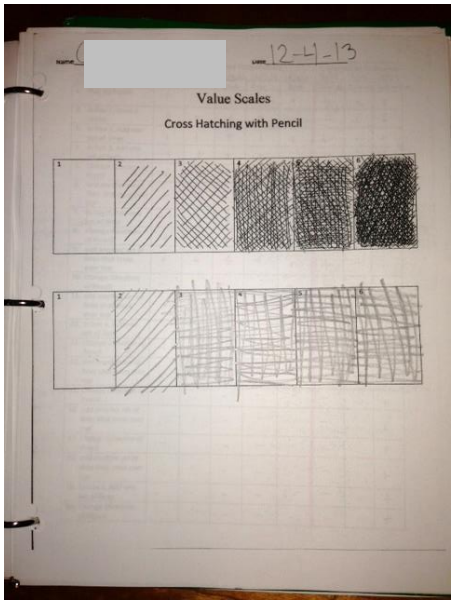



Figure 11a, CM Baseline Value Scale

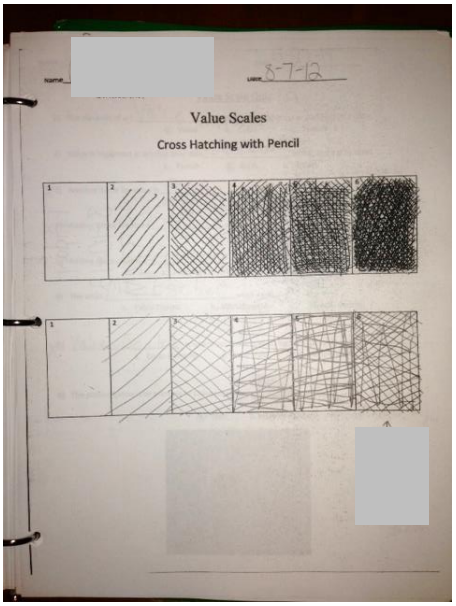



Figure 11b, CM Intervention Value Scale

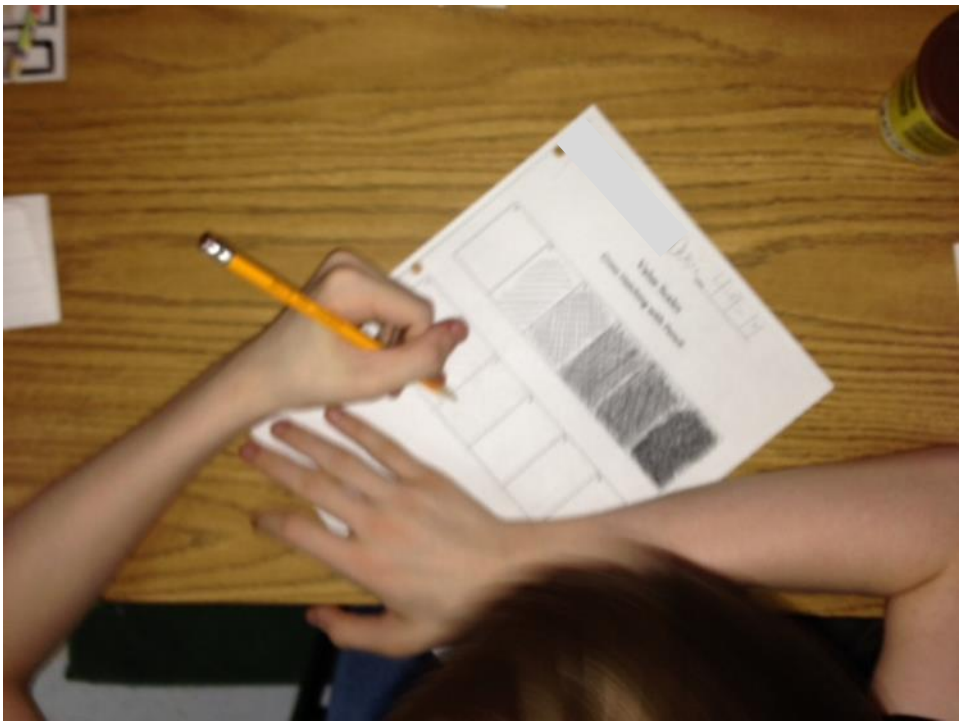


Figure 11c, CM Drawing

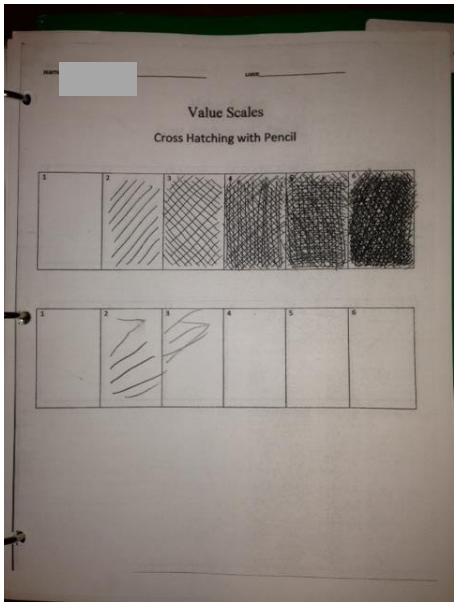



Figure 12a, DG Baseline Value Scale

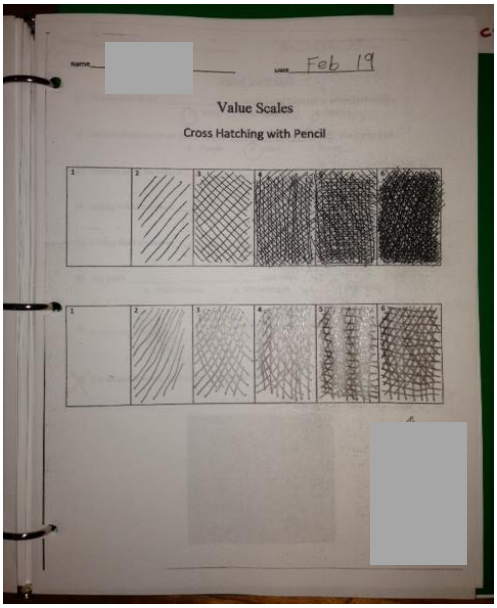



Figure 12b, DG Intervention Value Scale

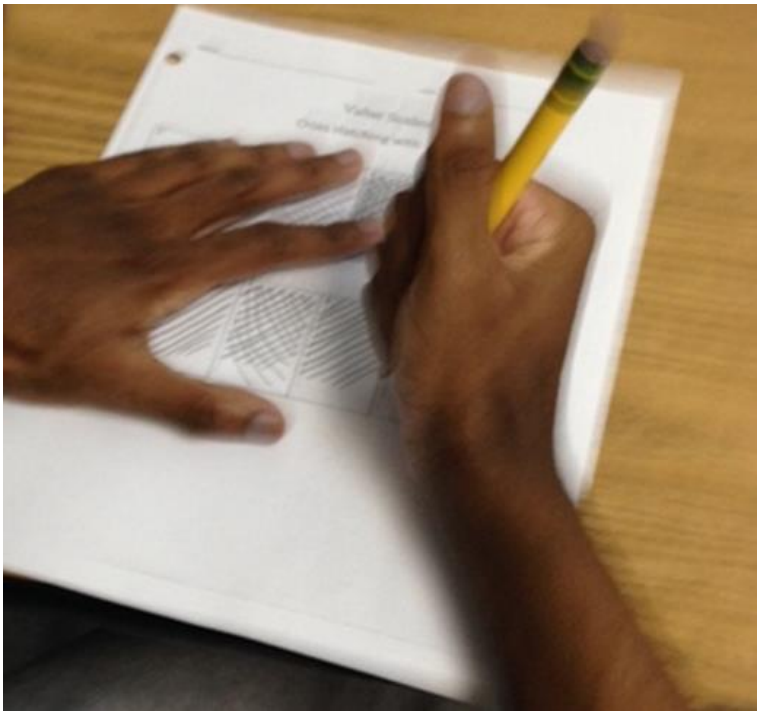


Figure 12c, DG Drawing

Figure 13a, AC Pinch Pot

Figure 13b, AC making his Pinch Pot

Figure 14a, CM Pinch Pot

Figure 14b, CM making his Pinch Pot

Figure 15a, DG Pinch Pot

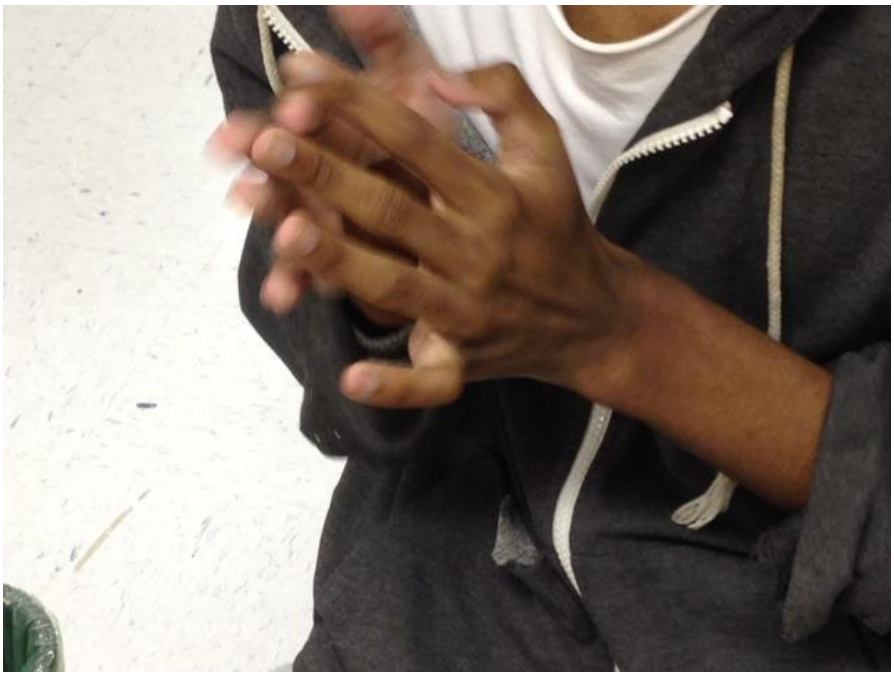


Figure 15b, DG making his Pinch Pot


Figure 16a KF Final Color Wheel


Figure 16b CB Final Color Wheel


Figure 16c EB Final Color Wheel

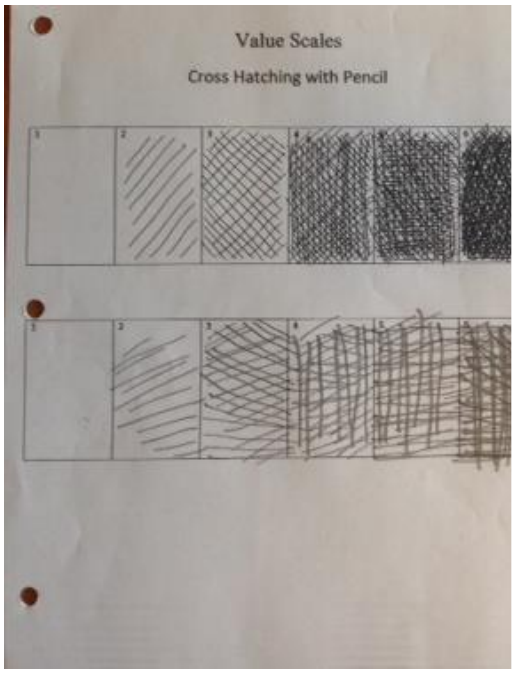



Figure 17a KF Final Value Scale

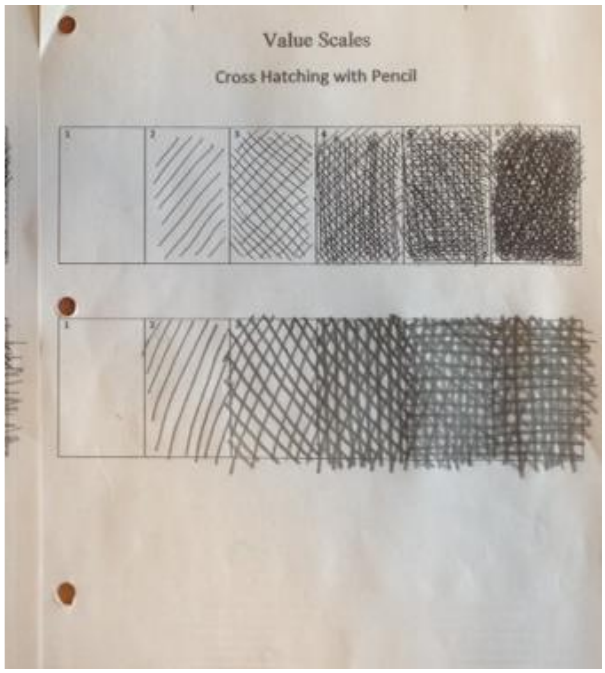



Figure 17b CB Final Value Scale

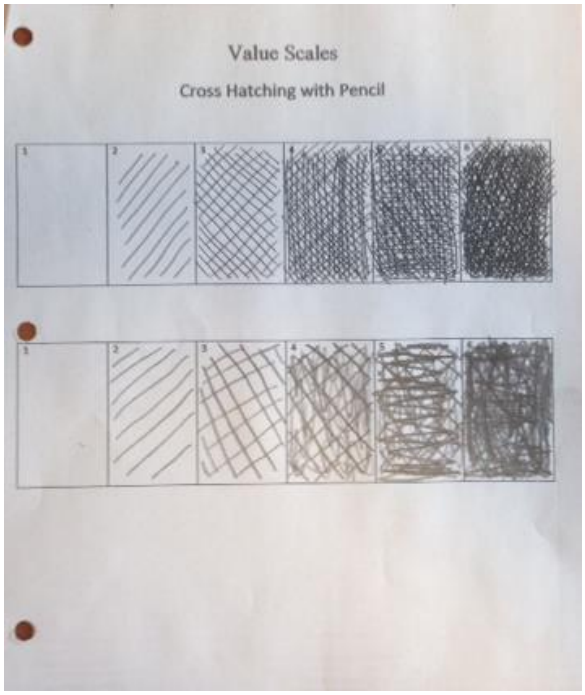



Figure 17c EB Final Value Scale

# Chapter Five: Discussion

This study suggested that using video based instruction to teach art lessons could have positive results with students with ASD compared to the same lessons taught through traditional in vivo teaching methods, but the data didn't show video based instruction to be a superior method for every student with ASD. Many of the students showed that video based interventions were the most effective, but there were also students that benefited more from traditional in vivo intervention methods. Even though the primary and secondary researcher stayed consistent through the study's procedures, there were many uncontrollable and unknown variables that came up during the study that may have impacted the results.

The first variable that presented itself was that every student mastered the painting lesson first, whether it was through the video or traditional in vivo intervention method. This indicated two possible explanations, the first being that the students may have been exposed to painting previously and had prior experience in mixing primary colors and creating color wheels. The second possible reason may be that the drawing lesson was more difficult when compared to the painting lesson. The value scale worksheet, found in Appendix B, could be simplified by making the boxes easier to see the cross-hatching technique. A majority of the students got to box four on the value scale worksheet and then just started scribbling. Improvements in the design of the drawing lesson's worksheet, as well as creating new lessons that students have had little or no experience in could have improved the results.

Another possible variable that may have affected the results can be found in the data from student 2: KF. KF was exposed to the video painting lesson for three sessions and mastered the color wheel on every attempt. His post test score improved to a 20% after a 10% pretest score. KF was exposed to the traditional in vivo drawing lesson a total of ten sessions, and reached

mastery in creating the value scale on the fourth attempt. He was then then given the traditional in vivo drawing lesson for six more sessions, when he should have moved on to the third lesson, ceramics. Because he received the traditional in vivo drawing lesson an additional six sessions, it may be the reason why his post test scores improved greatly when compared to the video painting lesson. During those six extra sessions, KF was exposed to the art content knowledge through the slides read to him by the researcher which may be the reason why his post test score improved to a 75% after a 38% pretest score. KF was most likely exposed to the intervention an extra six times as the researcher was looking for consistency in his ability to master the creation of the value scale.

During the course of this study another uncontrollable variable presented itself as students missed school days for both absences and snow days. These missed school days lead to the students not being exposed to the interventions every day, which could have impacted the time it took for them to reach mastery in the lessons. The secondary research experienced a lot of student absences as well as the unexpected snow days. One of the students that the secondary researcher worked with missed two weeks of school right in the middle of the intervention phase while another of her students was discontinued from the study due to his irregular attendance. Even though the students the primary researcher worked with did not miss days due to absences, the students did miss many of the interventions, which were to be given daily, due to the irregular and unexpected snow days experienced this school year. If the research was completed during the fall semester, when weather is less of a factor, there may have been improved results for video based instruction.

A fourth variable that may have affected the research was the uncontrollable differences in both the researchers and the students themselves. Like mentioned previously, both the primary and secondary researcher stayed as consistent as possible by removing unwanted stimuli, giving

the lessons to groups of 1-2 students, and lessons being observed by paraeducators and data being collected through procedural reliability and interobserver agreements. Even though the procedural reliability was high, the video lessons all showed the primary researcher creating the art example. So students working with the primary researcher were exposed to the primary researcher's voice during both the traditional in vivo and video lessons. The secondary researcher's students were exposed to the primary researcher during video based instruction and the secondary researcher during traditional in vivo lessons. In order to be more consistent students should be exposed to the same researcher through both the traditional in vivo and video lessons or all of the students should have been exposed to the different researchers. The differences in the students themselves may also have created an uncontrollable variable that may have impacted the study.

From the literature review, we know that ASD is a complex disorder that is still misunderstood. Students that have been diagnosed with ASD may show many similarities, but each of these students are very different from one another. Martin (2009) states that for every description that has been given of ASD, there are always exceptions that break these definitions. The variances in these students may have had an impact on this research. For example, Student 5: DG was unfocused during the video ceramic lessons and the primary researcher spent much of the lessons prompting him to watch the video and keep working as his eyes scanned all around the classroom, but during the traditional drawing lessons DG was more attentive. Not only was his behavior not fitting of the common descriptions of ASD, but his results showed that he reached mastery first through the video intervention method. Each student with ASD is different, thus giving a possible explanation as to why some students showed that video based instruction to be more effective, but some students still benefited from traditional in vivo teaching methods.

Even with these uncontrollable variables that arose during the study, we cannot deny that every student did benefit and showed that learning did occur in this study. These students with ASD showed that art projects are beneficial because art has the ability to help these students meet the following goals of developing imagination, sensory regulation, emotions/self-expression, developmental growth, visual-spatial skills, and recreation skills (Martin, 2009). Moving past the small successes of the study, every student with or without ASD should be exposed to the arts and have a chance to create.

# Chapter Six: Conclusion

We cannot forget that 1 in 150 children in the United States today are being diagnosed with ASD and there are currently approximately 560,000 people under the age of 21 in the United States with ASD, according to the Center for Disease Control (2012). Two figures that have continued to increase in recent years. As more and more students with these varying abilities are included in art education settings, art teachers may feel unprepared to teach students with disabilities (Guay, 1994; Hillert, 1997). It is necessary for today's art teachers to know how to work directly with students who have disabilities, and to know how to guide, support and collaborate with other school personnel, professionals and families. This research was intended to help art teachers by giving them another instructional tool that may become useful when working directly with students with ASD. Beyond contributing to the field of art education and special education, this research also wanted to answer a question that was developed through the primary researcher's observations of students with ASD; could these students benefit from art lessons taught through video?

The results from this study suggest that it is possible for some students with ASD to learn different art activities and retain more content information faster when exposed to video based instruction. However, when you compare the results of video based instruction with the results from traditional in vivo instruction there were no significant gains or data gaps showing that video based instruction offered a clear advantage over traditional in vivo methods. Some of the students did respond well to video based instruction while others showed that traditional in vivo teaching methods can still be an effective way to teach art to students with ASD. Improvements in the study's procedures, increased sample size, and novel art activities may show increased positive effects with video based instruction and future research should be done.

Even though the results of the study were not significant and the study should be replicated and researched further, every student did benefit and showed that they were able to create excellent color wheels, value scales, and pinch pots. Students also retained much of the art content that was presented during the lessons through their pre and post test scores. The greatest satisfaction from this research study came from Student 5: DG when he completed the painting lesson perfectly after the first lesson given through video based instruction. DG relied heavily on prompts, waited for instructions to be given, and showed negative behaviors when frustrated, but during the painting lesson he mixed the primary colors together creating his secondary colors and painted them in the correct spaces as though it was the easiest activity in the world. He was focused and did not need any prompts to stay on task during the painting lesson. His special education teacher, paraeducator, and behavior interventionist, who observed the lessons, were blown away with his focus and progress and they have now incorporated painting activities into his daily work schedule. Seeing students like DG succeed in these video based art lessons shows the promise that video based instruction can have, and why future research should be done.

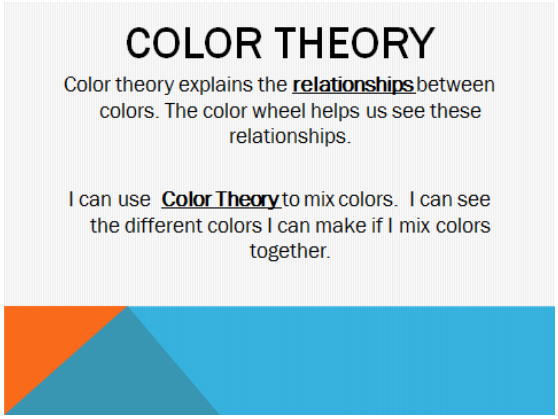
# Chapter Seven: Further Research Suggested

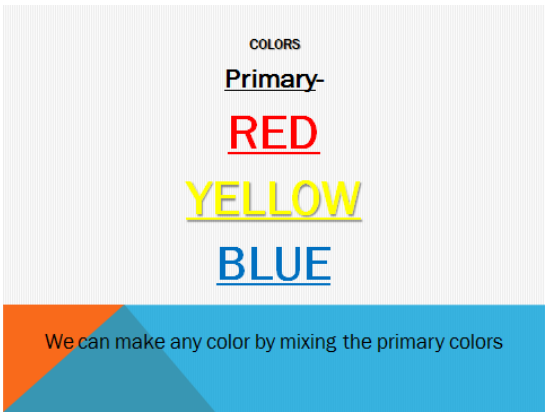
This research suggested that when teaching art lessons to students with ASD through video based instruction there will be no significant improvements when compared to traditional in vivo teaching methods. However, while this study was able to bring new research to both special education and art education, this research raised other issues and questions that should be addressed in future studies. These questions and issues could expand the research by including more participants, improve the methods used in this study, and consequently expand on the quality and quantity of data to analysis.

1. It would have been beneficial to include more female students with ASD in this research to compare gender differences.
2. By including more study participants, the study results could have shown more positive results for video based instruction.
3. The art activities could be modified to include only art activities that students have never been exposed to in the past and that the art activities used functionally equivalent skills.
4. Task analysis data sheets can be modified to simplify steps and eliminate unneeded steps in the creation of the different art examples.
5. Using these same methods within a regular education classroom could add more research to the effectiveness of video based instruction used within art education classes.

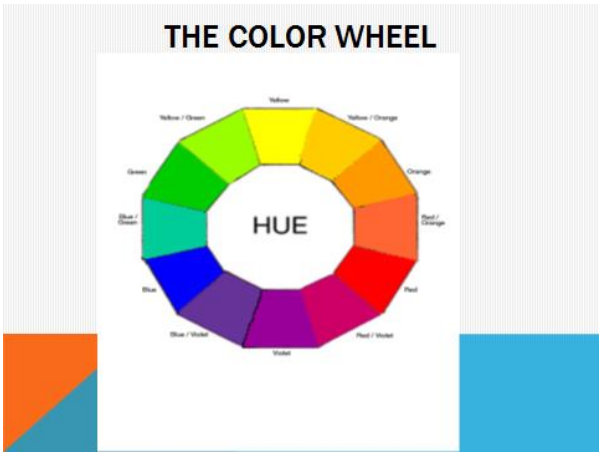
# Appendix

## Appendix A
## Painting Lessons

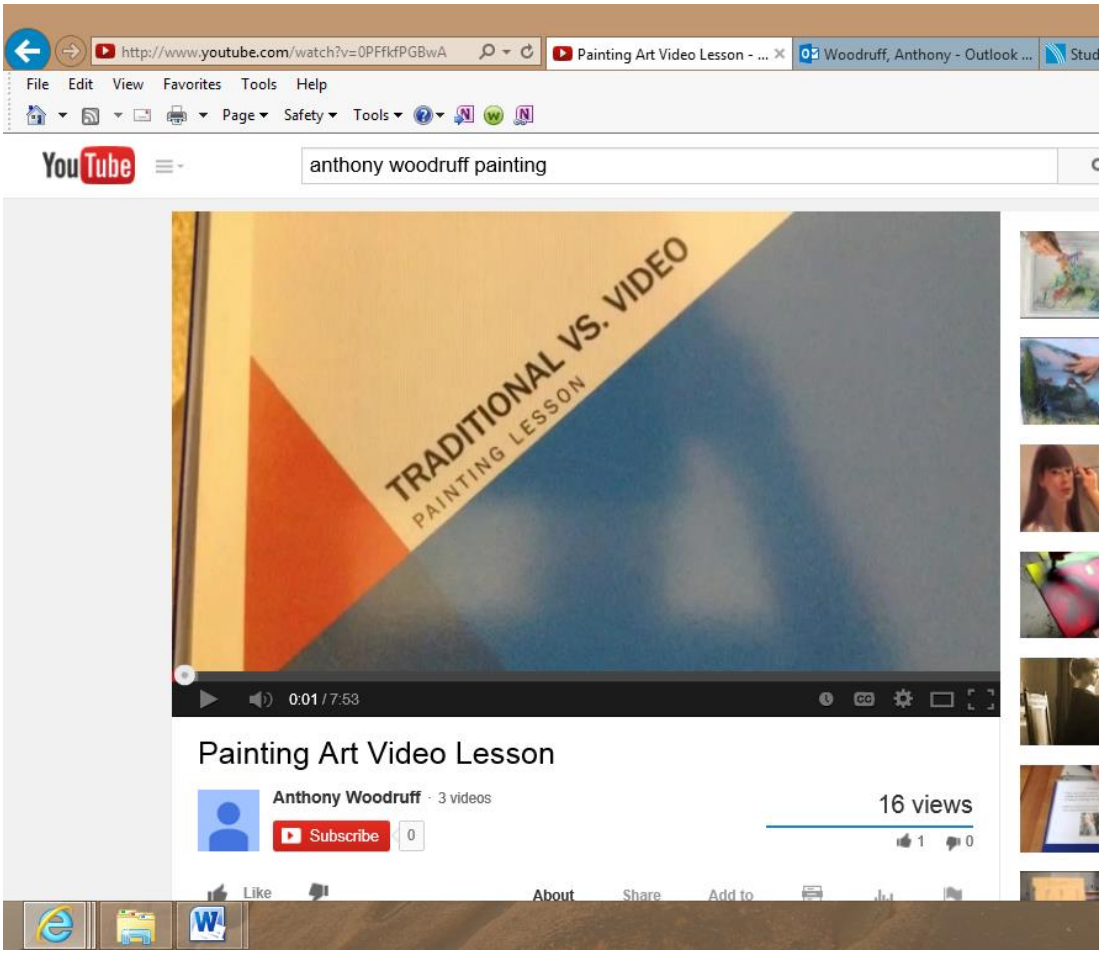






Painting Video Lesson can be accessed at… http://www.youtube.com/watch?v=0PFfkfPGBwA



Name_____ Date_____

# Color Wheel Quiz

1) Color theory explains the _____ between colors. The color wheel helps us see these relationships.
   a. Relationships b. Value c. Balance

2) I can use _____-_____to mix colors. I can see the different colors I can make if I mix colors together.
   a. Painting Rules b. Color Theory c. Split Complementary

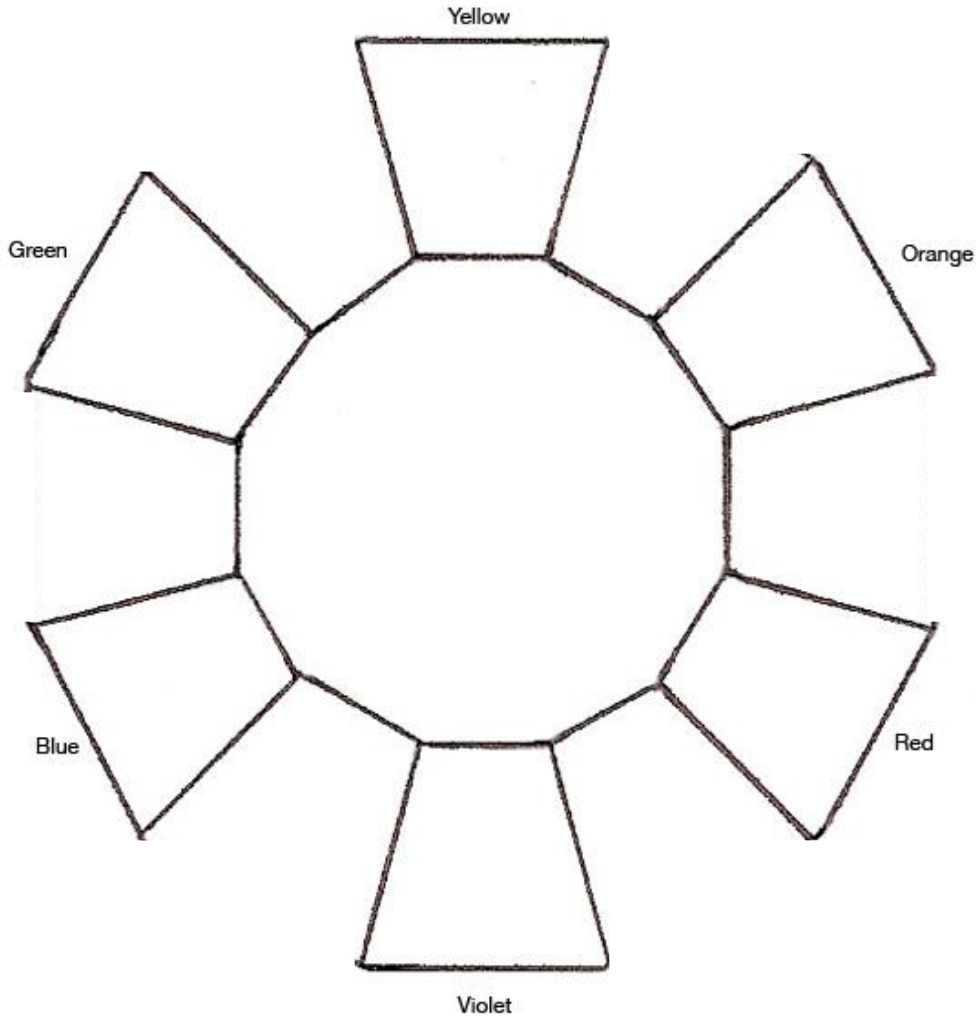
3) The 3 Primary Colors are - _____, _____ , and _____

4) The 3 Secondary Colors are- _____, _____, and _____

5) When I mix a primary color and a secondary color together I will get a _____ - _____.
   a. Intermediate Color b. Monochromatic Color c. Complementary Color

6) The arrangement of colors around a circle that shows the relationships between colors is called a _____ - _____.
   a. Value Scale b. Intensity Scale c. Color Wheel

## Blank Color Wheel



Traditional Painting Script

Open Binder

*Color Theory*

*Color theory explains the relationships between colors. The color wheel helps us see these relationships.*

*I can use Color Theory to mix colors. I can see the different colors I can make if I mix colors together.*

Flip Page

*Colors*

*We Have Primary Colors, Which are Red, Yellow, and Blue*

*With Red, Yellow, and Blue, We can make any color by mixing the primary colors*

Flip Page

*We also have Secondary Colors.*

*Secondary Colors are Orange, Green, and Violet.*

Flip Page

*Intermediate Colors*

*When you mix a primary color and a secondary color together…*

*It makes an Intermediate Color*

*For Example*

*BLUE + GREEN = blue-green*

*RED + VIOLET = red-violet*

Flip Page

*The Color Wheel*

*If you put all of the colors around a circle, that shows the relationships between colors. It is called a color wheel.*

Flip Page

*This is an example of a Color Wheel*

*We have the primary colors Yellow, Red, and Blue*

*And then we have the secondary colors, Green, Orange, and Violet*

*When we mix a primary and secondary we get intermediate colors*

*So if we mixed the primary color yellow, with the secondary color Green, We would get the intermediate color Yellow-Green.*

Painting Example-Primary

*This is what we're going to do now, this is the project were going to do about color, we are going to mix paint, and make color.*

*This is our Worksheet, here are our paint brushes, here's our paint and the plate were going to use to mix our paint.*

*I'm going to take my first brush and I'm going to paint Yellow. Ill dip my paintbrush in yellow and go over to the worksheet and paint the yellow box, yellow.*

*Try and paint the whole box yellow*

*Now ill set that paint brush down until I need it again*

*I'll pick up a new paint brush and Ill paint blue next*

*I'll put blue paint on my brush, and then go over to the blue and the worksheet and paint that box blue,*

*Now that I'm done with that paint brush, I'll get the next paint brush*

*With the third paint brush ill paint red, when I get enough red paint on the brush I'll go over to the worksheet and paint the red box red.*

*Once I get that whole box red, I can set my paint brush down and get ready to paint my secondary colors.*

Painting Example-Secondary

*Now we are going to paint the Secondary Colors, are secondary colors Green, Orange, and Violet and to do that we have to mix colors right on this plate*

*First ill pick up the paint brush with yellow still on the tip and were going to mix green first.*

*To do that ill grab some yellow paint and ill grab some blue paint and mix them together until I have a nice green.*

*I'll take the green paint over to the work sheet, and fill in the green box green.*

*I'm done with that paint brush and I can set it to the side.*

*Next were going to do violet, well mix red and blue to make violet.*

*I'll pick up the paint brush that still has blue on the tip, to make violet*

*Ill grab blue paint and red paint, and mix them together until I have a nice violet color. Once I have a good violet ill paint the violet box on the worksheet violet*

*Now I can set that brush done and grab the last brush, the one with red paint on it. Well use this brush to mix orange.*

*To mix orange we have to mix red and yellow.*

*Ill grab some red paint, then ill grab some yellow paint and mix them together until I get a good looking orange color.*

*Once I have good orange I'll go over to my worksheet and paint the orange box orange.*

*Once you paint them all in, your done painting*

*We have our primary colors, Yellow, red and Blue.*

*And we also have our secondary colors, Green, Violet, and Orange*

*Now that you're finished, it is time to do a worksheet.*

Color Wheel data sheet Student_____

Baseline Intervention Final+ = completed independently - = incorrect or incomplete

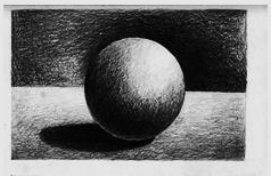
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Date: | | | | | | | | |
| **1. Pick up one paintbrush** | | | | | | | | |
| **2. Dip brush in yellow paint** | | | | | | | | |
| **3. Paint yellow box** | | | | | | | | |
| **4. Set down paint brush** | | | | | | | | |
| *5. Pick up 2nd paint brush* | | | | | | | | |
| *6. Dip brush in blue paint* | | | | | | | | |
| *7. Paint Blue box* | | | | | | | | |
| *8. Set Down Brush* | | | | | | | | |
| **9. Pick up last paintbrush** | | | | | | | | |
| **10. Dip brush in red paint** | | | | | | | | |
| **11. paint red box** | | | | | | | | |
| **12. Set Down Brush** | | | | | | | | |
| *13. Pick up Yellow Paint brush* | | | | | | | | |
| *14. Pick up yellow paint and set on plate* | | | | | | | | |
| *15. Pick up blue paint and set on plate* | | | | | | | | |
| *16. mix yellow and blue to make green* | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *17. Paint Green Box* | | | | | | | | |
| *18. Set down Paint Brush* | | | | | | | | |
| **19. Pick up Blue paint brush** | | | | | | | | |
| **20. Pick up blue paint and set on plate** | | | | | | | | |
| **21. pick up red paint and set on plate** | | | | | | | | |
| **22. mix blue and red to make violet** | | | | | | | | |
| **23. Paint Violet box** | | | | | | | | |
| **24. Set down Paint brush** | | | | | | | | |
| *25. Pick up Red paint brush* | | | | | | | | |
| *26. Pick up red paint and set on plate* | | | | | | | | |
| *27. Pick up yellow paint and set on plate* | | | | | | | | |
| *28. Mix red and yellow to make orange* | | | | | | | | |
| *29. Paint Orange box* | | | | | | | | |
| *30. Set down Paint Brush* | | | | | | | | |
| | | | | | | | | |
| *Percentage* | | | | | | | | |
| *Post Test* | | | | | | | | |

Appendix B
Drawing Lessons

## Value

- The element of art **Value** is a part of art. It is how light or dark a color is.
- Value is important in art that only uses **black**, white, and gray.



## VALUE OR TONE

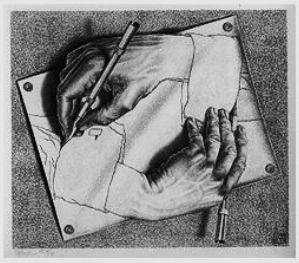
Another name for value is **Tone**.

**Adding White creates a tint**

**Adding Black creates a shade**

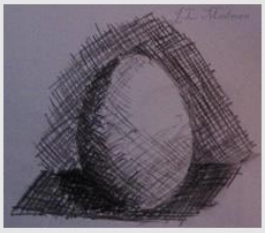
## MC Escher

M.C. Escher is an artist that used value



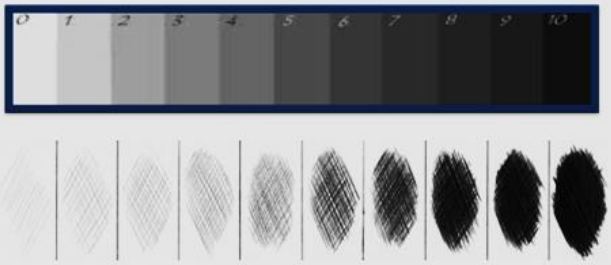
## Cross-Hatching

- Cross-Hatching is where you draw lines on top of each other to make value.

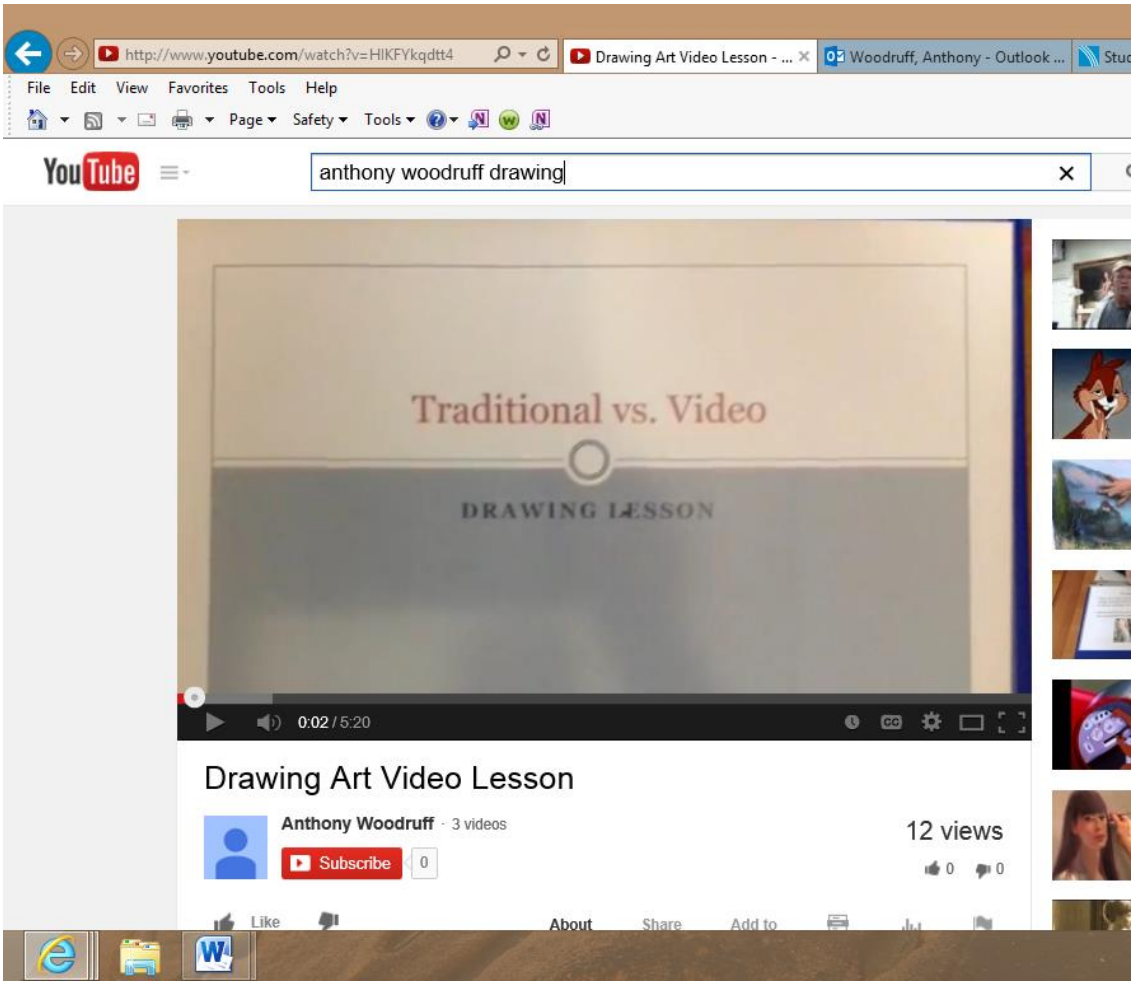


## Value Scale

In order to practice creating value, artist will create value scales

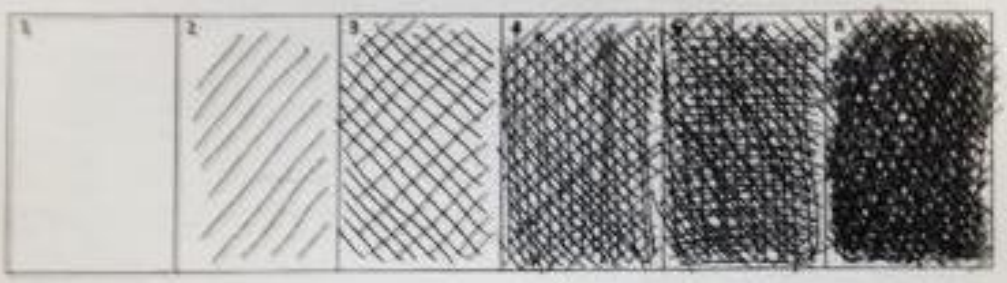


Drawing Video Lesson can be accessed at… http://www.youtube.com/watch?v=HIKFYkqdtt4



# Value Scales

## Cross Hatching with Pencil




| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| | | | | | |

Name_____ Date_____

# Value Scale Quiz

1) The element of art, _____ refers to the lightness or darkness of a color.

a. Value b. Color c. Texture

2) Value is important in art that only uses _____, white, and a gray scale.

a. Purple b. Black c. Brown

3) Another name for value is _____.

a. Form b. Shape c. Tone

4) Adding White creates a _____.

a. Tint b. Darkness c. Statue

5) Adding Black creates a _____.

a. Painting b. Shade c. Lightness

6) The artist _____ used value.

a. Pablo Picasso b. Michelangelo c. M.C. Escher

7) _____-_____ is where you draw lines on top of each other to make value.

a. Cross-Hatching b. Free-Style c. Value-Scales

8) The picture below is an example of Cross-Hatching. _____

a. True b. False

Traditional Drawing Script

Open Binder

*Value*

*The element of art Value is a part of art. It is how light or dark a color is.*

*Value is important in art that only uses black, white, and gray.*

Flip Page

*Value or Tone*

*Another name for value is Tone.*

*Adding White creates a tint*

*Adding Black creates a shade*

Flip Page

*M.C. Escher*

*M.C. Escher is an artist that used value*

*Here is one of his drawings…and here is another one of his drawings… there is value in both*

Flip Page

*Cross-Hatching*

*Cross-Hatching is where you draw lines on top of each other to make value*

*This is an example of Cross Hatching*

Flip Page

*Value Scale*

*In order to practice creating value, artist will create value scales*

*These are examples of Value Scales*

*It goes from light tints to dark shades*

Drawing Example – Cross Hatch Value Scale

*Now were going to make a value scale, and this is the worksheet were going to use to make a value scale, and we will cross hatch with a pencil.*

*Well match the value scale at the top to the value scale at the bottom.*

*Since box 1 is white, we can skip that one and not add lines to that box.*

*Number 2 has diagonal lines, so in box number 2 in going to start in the corner and add diagonal lines*

*Number 3 has 2 sets of diagonal lines that cross over top of each other. They cross over top of each other because were using cross hatching.*

*To match box 3 ill have diagonal lines going down, and then ill switch the direction of my pencil and add another set of diagonal lines that cross over, and matches box number 3*

*In box number 4 there are lines that go up and down, vertical lines. But first well add the diagonal lines that start in a corner and go down, change the direction of the pencil and add lines that cross over. Now ill add the lines that go up and down. Start from the top and go to the bottom.*

*Box number 5 gets a little darker. I'll start by add my first set of diagonal lines, then another set of diagonal lines that cross over top, starting in a corner and going down. Ill add vertical lines that go up and down, and now I need one more set of lines that go side to side.*

*With cross hatching, each time the lines cross over the value scale gets a little bit darker.*

*Number 6 is going to be my last box, and I need to add a bunch of lines that cross over, but I'll start the same way with a set of diagonal lines, ill switch the direction of my pencil and add more lines, I need lines that go up and down, lines that go side to side. I'll start at the bottom and add diagonal lines going up, I'll start at the other corner and make diagonal lines going up, trying to make the last box as dark as I can*

*When I'm down I can see that the value scale goes from white to black, we used cross hatching, lines that cross over top of each other to get there.*

*We are now done with this worksheet.*

Value Scale data sheet Student_____

Baseline Intervention Final+ = completed independently - = incorrect or incomplete

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Date: | | | | | | | | |
| **1. Pick up Pencil** | | | | | | | | |
| *2. In box 1, leave it White* | | | | | | | | |
| **3. In box 2, Add one set of lines** | | | | | | | | |
| *4. In box 3, Add one set of lines* | | | | | | | | |
| *5. Change Direction of Pencil* | | | | | | | | |
| *6. add another set of lines that cross over top* | | | | | | | | |
| **7. In box 4, Add one set of lines** | | | | | | | | |
| **8. Change Direction of Pencil** | | | | | | | | |
| **9. add another set of lines that cross over top** | | | | | | | | |
| **10. Change Direction of Pencil** | | | | | | | | |
| **11. add another set of lines that cross over top** | | | | | | | | |
| *12. In box 5, Add one set of lines* | | | | | | | | |
| *13. Change Direction of Pencil* | | | | | | | | |
| *14. add another set of lines that cross over top* | | | | | | | | |
| *15. Change Direction of Pencil* | | | | | | | | |
| *16. add another set of lines that cross over top* | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *17. Change Direction of Pencil* | | | | | | | | |
| *18. add another set of lines that cross over top* | | | | | | | | |
| **19. in box 6, Add one set of lines** | | | | | | | | |
| **20. Change Direction of Pencil** | | | | | | | | |
| **21. add another set of lines that cross over top** | | | | | | | | |
| **22. Change Direction of Pencil** | | | | | | | | |
| **23. add another set of lines that cross over top** | | | | | | | | |
| **24. Change Direction of Pencil** | | | | | | | | |
| **25. add another set of lines that cross over top** | | | | | | | | |
| **26. Change Direction of Pencil** | | | | | | | | |
| **27. add another set of lines that cross over top** | | | | | | | | |
| *28. Set Down Pencil* | | | | | | | | |
| | | | | | | | | |
| *Percentage* | | | | | | | | |
| *Post Test* | | | | | | | | |

Appendix C
Ceramic Lessons

## Ceramics

- Ceramics is a kind of art where things are made out of **CLAY**.
- People have been making **ceramics** for a very long time.

## Ceramics

- Clay is dug up from the **earth**. It is mixed with water. People make the clay into different shapes.
- After people make shapes with the clay, they put it in an oven. The oven is called a kiln. The kiln bakes the clay and makes it hard.

## History

A long time ago, people made clay in the shape of animals and humans. After they made them, they put them in the **kiln** to bake.

People have been using clay to make cups and dishes for a very long time.

## Chinese Ceramics

- There was a King in China. His name was Qin Shi Huang. He loved ceramics so much that he made a lot of statues of people. He called it The Terracotta **Army**.
- When he died, he army was buried with him. He thought the Army would protect him after he died.

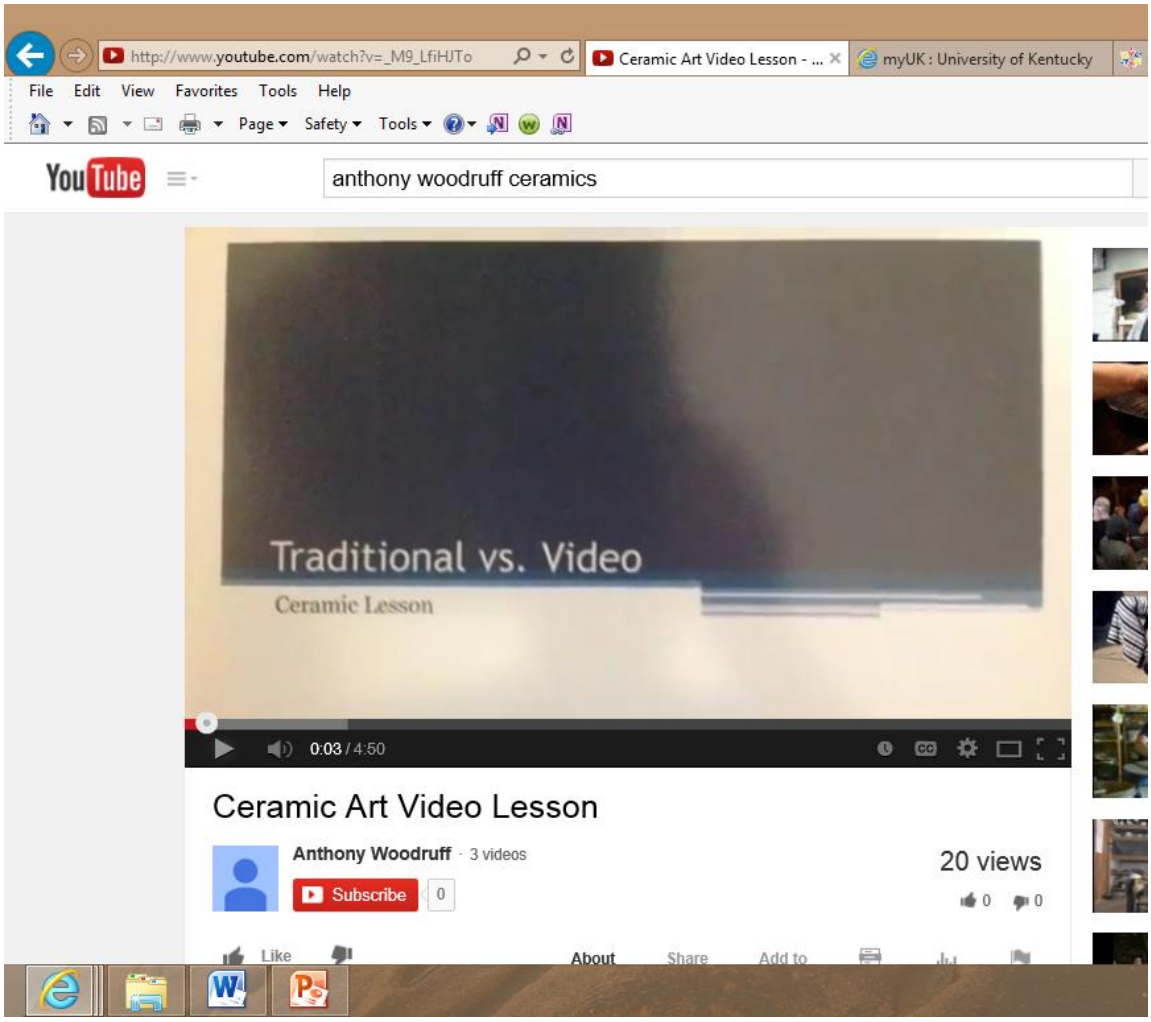
## Working With Clay

- We are going to make a pinch pot with clay. First, is pressing the clay. Pressing the clay is called **wedging**. It gets air out of the clay.
- The clay has to be wet or moist, so it won't be dry and crumbly while you are making your pinch pot.

## Pinch Pot

Pinch pots are **hand-formed** because they are made with your hands. People have been making pinch pots for a long time. They are very easy to make.

Ceramic Video Lesson can be accessed at… http://www.youtube.com/watch?v=_M9_LfiHJTo



Name_____ Date_____

# Ceramics Quiz

1) Ceramics a kind of art where things are made out of _____.
   a. Clay b. Paint c. Wood

2) People have been making _____ for a very long time.
   a. Focal Point b. Ceramics c. Elements of Art

3) Clay is dug up from the _____.
   a. Portrait b. Water c. Earth

4) A long time ago, people made clay in the shape of animals and humans. After they made them, they put them in the _____ to bake.
   a. Kiln b. Renaissance c. sink

5) King Qin Shi Huang loved ceramics so much that he made a lot of statues of people. He called it The Terracotta_____.
   a. Fresco b. Army c. Mural

6) Pressing the clay is called _____. It gets air out of the clay.
   a. Subtractive b. Rendering c. Wedging

7) Pinch pots are _____-_____ because they are made with your hands.
   a. Hand – formed b. Machine – Made c. Water – Color

Traditional Ceramic Script

Open Binder

*Ceramics*

*Ceramics is a kind of art where things are made out of CLAY.*

*People have been making ceramics for a very long time.*

Flip Page

*Ceramics*

*Clay is dug up from the earth. It is mixed with water. People make the clay into different shapes.*

*After people make shapes with the clay, they put it in an oven. The oven is called a kiln. The kiln bakes the clay and makes it hard.*

Flip Page

*History*

*A long time ago, people made clay in the shape of animals and humans. After they made them, they put them in the kiln to bake.*

*People have been using clay to make cups and dishes for a very long time.*

Flip Page

*Chinese Ceramics*

*There was a King in China. His name was Qin Shi Huang. He loved ceramics so much that he made a lot of statues of people. He called it The Terracotta Army.*

*When he died, he army was buried with him. He thought the Army would protect him after he died.*

Flip Page

*Working with Clay*

*We are going to make a pinch pot with clay. First, is pressing the clay. Pressing the clay is called wedging. It gets air out of the clay.*

*The clay has to be wet or moist, so it won't be dry and crumbly while you are making your pinch pot.*

Flip Page

*Pinch Pot*

*Pinch pots are hand-formed because they are made with your hands. People have been making pinch pots for a long time. They are very easy to make.*

Ceramic Example – Pinch Pot

*We're going to use Play Doh to make our Pinch Pot; Because Play Doh is easy to work with*

*When you get your Play Doh, Open the lid, Take the Play Doh out, and start to squeeze it together and knead it and Wedge It to get rid of air pockets.*

*After your done wedging it, were going to form it into a ball, so roll in your hands and make the best ball that you can make. It doesn't have to be perfect but you want to start with a ball.*

*Once you have the ball, Pick a spot and take your thumb and push right down the middle, so when you pull your thumb out you should have a hole where your thumb was*

*Next well put our thumb back in and squeeze the edges and rotate the pot. Squeeze and Rotate.*

*The hole is getting bigger with each squeeze, and it is starting to look more like a pot.*

*You can use your fingers too, to squeeze the edges as you rotate until you have a nice looking pinch pot*

*Your pinch pot is complete when there aren't any cracks in the side and you have worked the pot all the way around.*

*Once you have a good looking pinch pot set it down, and make sure you have a flat bottom.*

*If you like it and it looks good you're done with your pinch pot.*

Pinch Pot data sheet Student_____
Baseline Intervention Final+ = completed independently - = incorrect or incomplete

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Date: | | | | | | | | |
| 31. Take Clay out of container | | | | | | | | |
| 32. Squeeze (wedge) clay | | | | | | | | |
| 33. Roll Clay into a ball | | | | | | | | |
| 34. Press Thumb into middle of ball | | | | | | | | |
| 35. With Thumb in Squeeze | | | | | | | | |
| 36. And Rotate the Pot | | | | | | | | |
| 37. Put Fingers in the Pot | | | | | | | | |
| 38. With Fingers in Squeeze | | | | | | | | |
| 39. And Rotate the Pot | | | | | | | | |
| 40. Give the pot a flat bottom | | | | | | | | |
| 41. Make sure the top is even | | | | | | | | |
| 42. Set down Pot | | | | | | | | |
| | | | | | | | | |
| *Percentage* | | | | | | | | |
| *Post Test* | | | | | | | | |

Appendix D
Social Narrative

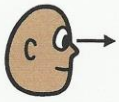
Social Narrative: Video Based Instruction

## Social Narrative: Traditional Instruction


Mr Woodruff is a art teacher. Mr Woodruff is going to




teach me about art. First I will listen and




watch what Mr. Woodruff is teaching me . Next I will




work on a art project. Last I will answer




questions. I will try my best, do good work,

&


and keep everything safe.

Appendix E
Approval Letters

Tates Creek High School
An International Baccalaureate School
1111 Centre Parkway
Lexington, Kentucky 40517
www.tchs.fcps.net
(859) 381-3620

Sam Meaux, Principal
Marty Mills, Associate Principal
Ann Shaw, Associate Principal

October 1, 2013

University of Kentucky
Research Office

**RE: Research Project**

I am pleased to write this letter of support for Anthony Woodruff to lead the research project, *Using Video Based Instruction to Teach Art to Students with Autism Spectrum Disorder,* at Tates Creek High School. The hypothesis of the study is very interesting as it relates to our mission statement to provide *all* students with rigorous and relevant instruction through a variety of strategies.

The students selected for this study will have parental permission to participate in this research project during the 2013-14 school year. If I can be of further help, please do not hesitate to contact me.

Sincerely

Samuel T. Meaux, Jr.
Principal

**Lafayette High School**
401 Reed Lane
Lexington, KY 40503
Phone (859) 381-3474 Fax (859) 381-3487

To whom it may concern—

This letter provides support for a research partnership with the University of Kentucky in the study *Using Video Based Instruction to Teach Art to Students with Autism Spectrum Disorders*. During the 2013-2014 school year, Lafayette High School in Fayette County will serve as a site for the research study.

Students participating in this study have been diagnosed with Autism Spectrum Disorder (ASD) or Asperger's Syndrome (AS), and will be pulled from an art class, study skills class, and or vocational class and receive additional arts instruction using video based methods. This study theorizes that students with AS/ASD, who receive video based instruction by watching recorded lessons, facilitates greater acquisition of artistic skills/abilities and results in greater mastery of art content knowledge, when compared to like students taught using more traditional teaching methods.

After University of Kentucky IRB approval, teacher consents, and parental consent are obtained, we would be happy to serve as the host site for this study. Teacher strategies which promote learning of grade-aligned content are important to this school, and we look forward to being the host site for this exciting research.

Sincerely,

Bryne A Jacobs
Principal
Lafayette High School

Appendix F
Parent Consent Form

Form C

IRB Approval
13-0094
THIS FORM VALID
10-11-13 - 3-7-14

Consent to Participate in a Research Study

**Using Video Based Instruction to Teach Art to Students with Autism Spectrum Disorders**

**WHY IS YOUR CHILD BEING INVITED TO TAKE PART IN THIS RESEARCH?**

Your child is being invited to take part in a research study about using Video Based Instruction to teach art lessons to students with Autism Spectrum Disorders. Your child is being invited to take part in this research study because beyond the ASD diagnoses, your student has been enrolled in traditional art classes previously, they are independently able to access their environment, they have enough fine motor skills to independently create art, and they show interest in creating art. If your child volunteers to take part in this study, your child will be one of about 7 other students to do so.

**WHO IS DOING THE STUDY?**

The person in charge of this study is Anthony Woodruff of University of Kentucky Art Education Department where he is a graduate student. Anthony Woodruff also has worked with your child at Lafayette High School as an FMD Para-educator or is requesting to work with your child in his current position as Humanities Teacher at Tates Creek High School.

He is being assisted by Lauren Sherrow of the University of Kentucky Special Education Department where she is a graduate student. She is also a FMD Teacher at Lafayette High School.

He is being guided in this research by Dr. Richards of the University of Kentucky Art Education Department, and Dr. Spriggs of the University of Kentucky Special Education Department.

**WHAT IS THE PURPOSE OF THIS STUDY?**

From my observations, students with autism learn best, and retain more knowledge when presented material through technology. I believe that when those same students are given video based instruction, through a recorded video of an art lesson, they can learn to develop artistic skills and art content knowledge with greater success than through traditional teaching methods such as teacher lectures, presentations, direct instruction and student note taking. The purpose of this study is to test that hypothesis, and determine the effect that video based instruction has in art lessons.

**ARE THERE REASONS WHY YOU SHOULD NOT TAKE PART IN THIS STUDY?**

In order to participate in this study your child will be pulled out of an Art Class, a Vocational Class, a Study Skills class, or participate during available free time. If you do not feel uncomfortable with this, please do not give permission for your child to participate.

IRB

**WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?**

The research procedures will be conducted at Lafayette High School and Tates Creek High School during the school day. Your child will participate in 3 different art lessons, which are designed to be completed in less than 30 minutes. Students will be pulled out of their art class, study skills class, vocational class, or during available free time to participate.

**WHAT WILL YOUR CHILD BE ASKED TO DO?**

1. Your child will act as their own control group through baseline data testing done before being placed into alternating treatments. Students will complete a pre-test in order to test what art content knowledge they know in the three subjects being taught; drawing, painting, and ceramics. Data will be collected. The researcher can assist student in reading questions. Students will also be asked to create art examples of a value scale, color wheel, and pinch pot 5 times as part of the baseline testing. Data from art examples will be collected on a Task Analysis data sheet.
2. Students will then be placed into alternating treatment schedules. Student Group 1 will be exposed to Video Painting Lesson, and Traditional Drawing Lesson. Student Group 2 will be exposed to Video Drawing Lesson and Traditional Painting Lesson. Students will receive both lessons daily until they have shown mastery in creating an art example in one of the methods. Mastery will be defined as reaching 75% and data will be collected through a task analysis data sheet.
3. Once participants have shown mastery in one of the methods, they will take the post-test for both Painting and Drawing art content and move on to the 3rd lesson, Ceramics. Students who have reached mastery in the Video Lesson first will receive the 3rd lesson through video. Students who have reached mastery in the Traditional Lesson first will receive to 3rd lesson through Traditional.
4. Students will receive the ceramic lesson daily until they have shown mastery in creating an art example in one of the methods. Mastery will be defined as reaching 75% and data will be collected through a task analysis data sheet. Students will then take Post-Test of ceramic art content knowledge and data will be collected.
5. Once all data has been collected with each student, research testing will conclude.

**WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?**

To the best of our knowledge, the things your child will be doing have no more risk of harm than you would experience in everyday life.

**WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?**

There is no guarantee that your child will get any benefit from taking part in this study. However, this study will determine the potential benefit that video based instruction has when it is used in an Art lesson. Your child's willingness to take part, however, may, in the future, help society as a whole better understand this research topic.

IRB

**DOES YOUR CHILD HAVE TO TAKE PART IN THE STUDY?**

If your child decides to take part in the study, it should be because they really want to volunteer. They will not lose any benefits or rights they would normally have if they choose not to volunteer. Your child can stop at any time during the study and still keep the benefits and rights you had before volunteering. As a student, if your child decides not to take part in this study, their choice will have no effect on their academic status or grade in any of their classes.

**IF YOUR CHILD DOES NOT WANT TO TAKE PART IN THE STUDY, ARE THERE OTHER CHOICES?**

If your child does not want to be in the study, there are no other choices except not to take part in the study.

**WHAT WILL IT COST TO PARTICIPATE?**

There are no costs associated with taking part in the study.

**WILL YOUR CHILD RECEIVE ANY REWARDS FOR TAKING PART IN THIS STUDY?**

Your child will not receive any rewards or payment for taking part in the study.

**WHO WILL SEE THE INFORMATION THAT YOU GIVE?**

We will make every effort to keep confidential all research records that identify you or your child to the extent allowed by law. Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. You or Your child will not be personally identified in these written materials. We may publish the results of this study; however, we will keep your name, your child's name and other identifying information private.

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. All data and documentation will be stored in a fire proof safe at the primary researcher's residence. Documentation that identifies you or your child will be destroyed after a 6 year period.

We will keep private all research records that identify you and your child to the extent allowed by law. However, there are some circumstances in which we may have to show your information to other people. For example, we may be required to show information which identifies you to people who need to be sure I have done the research correctly; these would be people from such organizations as the University of Kentucky.

**CAN YOUR CHILDS TAKING PART IN THE STUDY END EARLY?**

If your child decides to take part in the study you and your child still have the right to decide at any time that you no longer want to continue. Your child will not be treated differently if you decide to stop taking part in the study.

The individuals conducting the study may need to withdraw your child from the study. This may occur if your child is not able to follow the directions they are given, if they find that your child being in the study is more risk than benefit. There are no consequences for withdrawing.

IRB

**WHAT ELSE DO YOU NEED TO KNOW?**

There is a possibility that the data collected from you may be shared with other investigators in the future. If that is the case the data will not contain information that can identify you unless you give your consent or the UK Institutional Review Board (IRB) approves the research. The IRB is a committee that reviews ethical issues, according to federal, state and local regulations on research with human subjects, to make sure the study complies with these before approval of a research study is issued.

**WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, CONCERNS, OR COMPLAINTS?**

Before you and your child decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the primary investigator, Anthony Woodruff at Anthony.Woodruff@fayette.kyschools.us or call Tates Creek High School at 381-3620 to speak with him directly. If you have any concerns, you can contact George McCormick, the FCPS research coordinator, at George.McCormick@fayette.kyschools.us or call his office at 381-4245. You can also contact the Lafayette High School or Tates Creek High School administration teams. If you have any questions about your child's rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428. You will be given a copy of this consent form to take with you.

_____
Signature of Parent/Guardian

_____ _____
Printed name of parent/Guardian Date

Appendix G
Student Assent Form

Form D Nonmedical IRB Assent Form

IRB Approval
13-0094
THIS FORM VALID
10-11-13 - 3-7-14

**ASSENT FORM**

**Using Video Based Instruction to Teach Art to Students with Autism Spectrum Disorders**

You are invited to be in a research study being done by *Anthony Woodruff* from the University of Kentucky. You are invited because beyond the ASD diagnoses, you have been enrolled in traditional art classes previously, are independently able to access your environment, have enough fine motor skills to independently create art, and show interest in creating art.

If you agree to be in the study, you will be asked to participate in a series of 3 different art lessons. You will receive instruction, and make an art piece. You will also take a pre-test and a post-test. Each Art Lesson is designed to be finished within 30 minutes.

*You will not receive any type of payment or incentive for participation.*

Your family will know that you are in the study. If anyone else is given information about you, they will not know your name. A number or initials will be used instead of your name.

If something makes you feel bad while you are in the study, please tell any of your other teachers or administrators. If you decide at any time you do not want to finish the study, you may stop whenever you want.

You can ask your teacher questions any time about anything in this study. You can also ask your parent any questions you might have about this study.

Signing this paper means that you have read this or had it read to you, and that you want to be in the study. If you do not want to be in the study, do not sign the paper. Being in the study is up to you, and no one will be mad if you do not sign this paper or even if you change your mind later. You agree that you have been told about this study and why it is being done and what to do.

_____ _____
Signature of Person Agreeing to be in the Study Date Signed

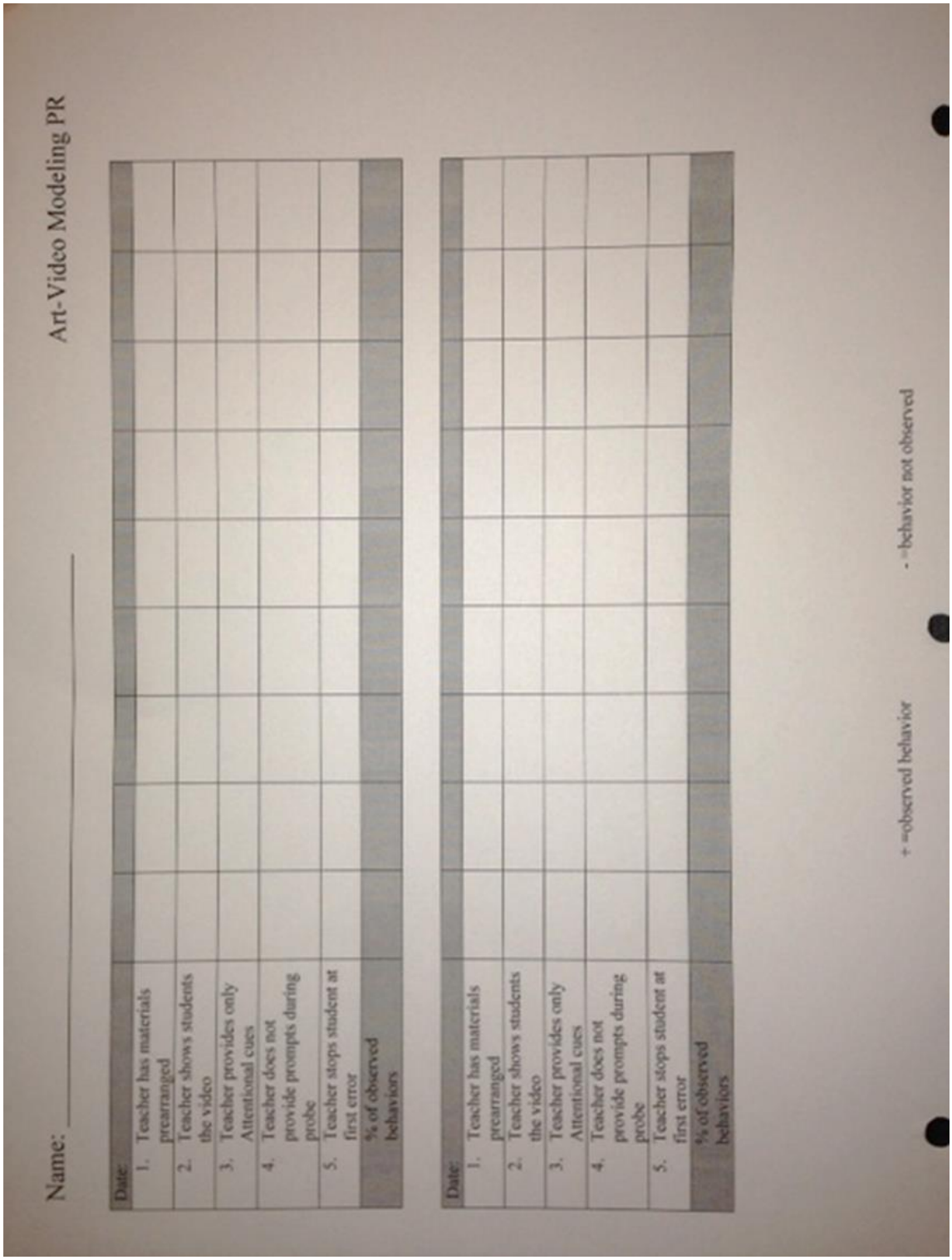
1. How long will each art lesson take me? _____
2. Why were you chosen for this study? _____
3. If something makes you feel bad, who should to talk to? _____

_____

Form D: Nonmedical Research Assent Document
S2D

University of Kentucky
Revised 6/21/07

Appendix H
Procedural Reliability Data Sheet



Name: _____

Art-Video Modeling PR

| Date: | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Teacher has materials prearranged | | | | | | | | | | | |
| 2. Teacher shows students the video | | | | | | | | | | | |
| 3. Teacher provides only Attentional cues | | | | | | | | | | | |
| 4. Teacher does not provide prompts during probe | | | | | | | | | | | |
| 5. Teacher stops student at first error | | | | | | | | | | | |
| % of observed behaviors | | | | | | | | | | | |

| Date: | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Teacher has materials prearranged | | | | | | | | | | | |
| 2. Teacher shows students the video | | | | | | | | | | | |
| 3. Teacher provides only Attentional cues | | | | | | | | | | | |
| 4. Teacher does not provide prompts during probe | | | | | | | | | | | |
| 5. Teacher stops student at first error | | | | | | | | | | | |
| % of observed behaviors | | | | | | | | | | | |

+ =observed behavior - =behavior not observed

Name: _____ Art-in vivo PR

| Date: | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1. Teacher has materials prearranged | | | | | | | | | |
| 2. Teacher reads from script | | | | | | | | | |
| 3. Teacher provides only attentional cues | | | | | | | | | |
| 4. Teacher does not provide prompts during probe | | | | | | | | | |
| 5. Teacher stops student at first error | | | | | | | | | |
| % of observed behaviors | | | | | | | | | |

| Date: | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1. Teacher has materials prearranged | | | | | | | | | |
| 2. Teacher reads from script | | | | | | | | | |
| 3. Teacher provides only Attentional cues | | | | | | | | | |
| 4. Teacher does not provide prompts during probe | | | | | | | | | |
| 5. Teacher stops student at first error | | | | | | | | | |
| % of observed behaviors | | | | | | | | | |

+ =observed behavior - =behavior not observed

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# Vita

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Degrees Awarded

Bachelor of Arts, Art Education, Magna cum Laude
Kentucky Wesleyan College, Owensboro, KY, December 2010

Professional Positions Held

**Artist, 2009-Present**
Mixed Media, Oil Painting, Wood Sculpture

**Arts and Humanities Teacher,** August 2013-Present
Tates Creek High School, 1111 Centre Parkway Lexington KY 40517
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**FMD Special Education Paraeducator,** January 2011-August 2013
Lafayette High School, 401 Reed Lane Lexington, KY 40503
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Professional Honors

Theophia Joan Oexmann Fine Arts Award, Kentucky Wesleyan College – Spring 2010
Kentucky Wesleyan College Art Student of the Year – Spring 2010
Who's Who Among Students in American Universities and Colleges – 2009-10
Stoner Creek Arts, Barrel Mane-ia 2011, "Paris Pepsi" – Fall 2011
Co-Authored book, "The Lexington Art Museum: an explorer's guide" – Spring 2013