YouTube Instruction on Ceramic Techniques

In the Middle School Art Classroom

by

Allison Lee

A Thesis Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Arts

Approved April 2013 by the
Graduate Supervisory Committee:

Mary Erickson, Chair
Mary Stokrocki
Bernard Young

ARIZONA STATE UNIVERSITY

May 2013

ABSTRACT

Art educators use a variety of teaching and demonstration methods to convey information to students. With the emergence of digital technology, the standard methods of demonstration are changing. Art demonstrations are now being recorded and shared via the internet through video sharing websites such as YouTube. Little research has been conducted on the effectiveness of video demonstration versus the standard teacher-centered demonstration. This study focused on two different demonstration methods for the same clay sculpture project, with two separate groups of students. The control group received regular teacher-centered demonstration for instruction. The experimental group received a series of YouTube videos for demonstration. Quantitative data include scores of clay sculptures using a four-point scale in three separate categories based on construction abilities. Qualitative data include responses to pre and post-questionnaires along with classroom observations. The data is analyzed to look at the difference, if any, between YouTube instruction and regular teacher-centered instruction on middle school students' ceramic construction abilities. Findings suggest that while the YouTube video method of demonstration appeared to have a slightly greater effect on student construction abilities. Although, both instruction methods proved to be beneficial.

DEDICATION

To my Mother and Father:

Thank you for helping me discover this path and for supporting my education.

ACKNOWLEDGMENTS

This Thesis would never have been written if not for the help of the following people: Mary Erickson, Bernard Young, Mary Stokrocki, Jessica Hickey, Dan Skrobel, and Hillary Andrelchik.

TABLE OF CONTENTS

Page

CHAPTER Page

APPENDIX Page

LIST OF TABLES

LIST OF FIGURES

Chapter 1

INTRODUCTION

Statement of Problem

Innovation is the fuel for human nature. Humans are innovative and creative beings who thrive on new methods and improved versions of those methods. Looking back shows us where we have been, and forecasting forward helps us to determine where we want to be. The twenty-first century is centered on technology at the cutting edge. In today's society, many children come out of the womb having already been exposed to digital media via sound/digital music played by expectant mothers. Children are proving to thrive with technology, so why are many educators not utilizing the resources? Some educators have embraced the technology era employing digital resources such as YouTube and lots of other technologies; however others have yet to test the waters.

Purpose of Study

The purpose of this study is to find out whether YouTube instruction is beneficial to students in the art classroom and at what level it compares to regular teacher delivered art instruction. Technology is popular and engaging among youth. So, it would be advantageous for a teacher to know whether using educational technology in the art classroom actually does affect the students and change their art product outcome.

Research Question

What, if any, difference is there between the effectiveness of YouTube instruction and regular art teacher instruction on middle school students' ceramic construction abilities?

Theoretical Perspective

This study is based around two theories proposed by John Dewey: conditions of growth, and play and work in the curriculum. According to Dewey, "In directing the activities of the young, society determines its own future in determining that of the young. Since the young at any given time will at some later date compose the society of that period, the latter's nature will largely turn upon the direction children's activities were given at an earlier period" (Dewey, 1966, p. 41). This theory relates to how society grows and changes in life, and more specifically in the educational setting. As today's society is beginning to learn in new and different ways, the methods of teaching as well as teachers are changing and adapting. Adults have incorporated technology into their everyday activities and way of life, which directly affects the youth of today. Every day, at a younger age, children are growing up immersed in a world of technology and learning about as well as from this digital media. These technology-immersed adults and youth relate to Dewey's theory: that as the condition of growth progresses, specifically with the rise of technology, society is growing into a full on digital age in which both adults and children are utilizing technology in their everyday lives. With that said, the second Dewey theory becomes relevant; play and work in the curriculum.

Recently, society appears to tolerate and possibly enjoy the use of technology with its incorporation into work, school and leisure time. Some forms of technologies that are categorized as leisurely and playful, such as YouTube, are now crossing over into the school and educational setting. Dewey states "Experience has shown that when children have a chance at physical activities which bring their natural impulses into play, going to school is a joy, management is less of a burden, and learning is easier" (Dewey,

1966, p. 194). By utilizing the leisurely infused educational tools within digital technology in the curriculum, children are able to express a sense of play and relate joy within learning. An example of this would be if one watched a YouTube video on how to paint with watercolor. The instructional video technically may not be the emphasis of play, however the act of play comes after the video when the viewer then attempts the new skill. It is the partly the act of watching the video that builds anticipation and excitement, which then leads to performance of a playful and enjoyable act.

Dewey's theory of incorporating playful experiences into the curriculum can be made possible with the incorporation of digital technology in the classroom. One must note that not all forms of technology incorporated in the workplace and/or school are fun for all workers or students. Some forms of technology may remain mundane or uninteresting and counteract the claim of play and joy with the use of technology in the workplace or curriculum. However, Dewey's theory relates play with technology when associated with the digital YouTube technology and one's feeling of anticipation or excitement for the actual act of performance. The theory holds true in the sense that Dewey's claim of using natural impulses of play to enhance learning, is generally associated with fun when connected with a specific personal enjoyment related to topics displayed in the YouTube technology.

Definition of Terms

Clay Joint: A joint is two separate pieces of clay that are connected together.

Digital Media: Digital media are "the systems of public communication, the systems of content production and distribution, and the computer and networked-based technologies that support and shape them" (Pavlik, 2008, p. 8).

Educational Technology: Educational technology is "the application of engineering principles or technology to instrumentation useful to the process of teaching" (Davies & Hartley, 1972, p. 2).

Scoring & Slipping (Clay): To score clay, one must first use a dull knife clay tool to cut/score shallow marks into the clay, then cover those score marks with slip, a slippery watered down clay. Slip acts as a bonding medium and creates a strong joint connection for the clay.

YouTube: YouTube is an online video sharing website that allows members to post, comment, and share videos on the internet for anyone to watch.

Limitations

Limitations of this study are uncontrolled variables including, (1) dissimilar class size and male/female ratio, (2) class period/time of day, (3) student motivation and interest in project, (4) students' natural ability, (5) YouTube website not available on school computers, (6) broken or exploded projects. I could not control the class sizes as well as the number of males and females in each class. Every class size and student is predetermined by the school itself, not by researcher choice. This means that class sizes can be different in male/female ratio as well as the number of total students enrolled per class period. I also could not control the time of day that the art class was held. The school has a set schedule, so some classes may be closer to a lunch break or the end of the day. This can potentially lead to variances in behavior and product outcome.

I could not control student motivation level as well as students' natural ability or pre-existing skill set. Each student at this school is required to take an elective class, which means some students may not have an interest in art or are only attending class

because they have to. In addition, students in these art classes may not have an interest in this specific type of project or art medium. Students' natural abilities are also an element that I could not control. Each student has developed a natural skill set or ability in art which is out of the control of the researcher and the project itself.

I could not control the security measures that the school has adopted for internet usage. This particular school did not allow for student or teacher YouTube usage on any school computer. Lastly, I could not control whether the actual project product would be completed to the final stage. Overall, many variables exist when creating clay sculptures with students, and I was unable to predict how many or which projects would not make it to the final stage.

Chapter 2

REVIEW OF LITERATURE

Social Media, Society, and Youth Today

In today's society exposure to media is inevitable. Everywhere you turn you are bound to see some sort of advancing technology. Cameras, televisions, computers, and the internet are all examples of familiar technology to most Americans. Exposure to these media is beginning younger than many people realize. For example, when a child is in the womb of his/her mother, s/he may experience audio media such as music. Using audio media has become a popular trend, for example, exposing an unborn child to such classical music as Mozart, in hopes to stimulate some sort of brain development (Pavlik, 2008). Parents are also inclined to show children a variety of educational television shows such as *Sesame Street* or *Little Einsteins*; both popular shows aimed at advancing a child's intellectual level. What parents aren't realizing is that these television shows are where the exposure to technology and social media is beginning, and children are connecting with digital media at an alarming rate. Many companies are also catering to this new wave of tech savvy children. For example, the popular children's toy company Fisher Price has a product called the *Laugh & Learn Apptivity Case* for iPad devices that targets children at the young ages of six to twelve months (Fisher-Price.com). With companies targeting the younger generation with technology, it's easy to assume this next generation of youth are growing up technologically inclined.

According to Pavlik (2008), today's generation of youth is the first to prefer a computer over a television. Computers provide multiple facets of media such as games, internet, and social media outlets, so the new generational preference is really no surprise.

Youths are able to access bountiful sources of entertainment as well as information with a computer and internet source. Pavlik mentions that current "research suggests the average teen spends 44 hours per week immersed in media," which averages "roughly 6.5 hours of media use daily" (Pavlik, 2008, p. 267). In addition, he states that "approximately 11 million, or 87 percent, of American teens go online regularly (i.e. nine out of ten teens) (Pavlik, 2008, p. 267). Pavlik also suggests that "parents typically support their children's rampant media habits" because "nearly two-thirds (65 percent) of American teens have a cell phone" and "four in five (80 percent) own or have regular access to a computer" (Pavlik, 2008, p. 268). With these statistics, it's easy to see that our newest generation of youth are growing with technology and are assumed to continuously demand more of it in further aspects of their daily lives.

Educational Technology

Technology and media may sound like recent terms and advancements in the 21st century, however technology and media, more specifically educational technology, date back to the 19th century. To begin, one must understand the definition of educational technology and what it entails. According to Ely (2008), educational technology is a broad term with relation to the more narrow term, instructional technology. Educational technology is noted as "the use of technology in any aspect of the education enterprise, while instructional technology is…. the process of teaching and learning through the purposeful use of strategies and communication media" (Ely, 2008, p. 244).

The first eminent educational technical tool fell in the category of instructional film. According to Westera, at the end of the 19th century, Thomas Edison invented the first "technology for recording and displaying silent moving images" called the

kinetograph (Westera, 2012, p. 346). This device was a camera that used film rolls instead of single plates for recording. The kinetograph was patented in 1892 and was claimed by Edison to revolutionize education with "a new modality of learning content, bringing recorded realities into the classroom" (Westera, 2012, p. 346). This type of instructional film is also categorized as audiovisual education; defined as technological tools designed to improve instruction. Specific tools include "concrete learning materials such as films, filmstrips, recordings and other media to enrich the curriculum" (Ely, 2008, p. 245).

The next major educational technological tool to arise after instructional film was instructional radio. Beginning in the early 1900's radio stations started appearing worldwide. After about ten years from the rise of radio stations, many classrooms made efforts to utilize this new medium. It was thought that parallel to film, this new medium would also help bring world realities into the classroom (Westera, 2012). Less than twenty years after the rise of the radio came the next advancement in technology; television. Instructional television was a major milestone in the history of educational technology. It began in 1928 when television sets first became available, however televisions didn't really take off until the 1950's when the large scale market adoption took place. Once televisions became readily available and accessible to the public, the power of pictures and words became an inspiration for teaching opportunities (Westera, 2012). This was the birth of mainstream instructional television. The rise of popular culture instructional television includes the likes of *School House Rock*, *Bob Ross*, and *Bill Nye the Science Guy*. Today, in the 21st century, these names/shows are still widely recognized and utilized in society as well as in educational classrooms. However, these

names/shows may not have been so well known or successful without the invention of audio compact cassettes, video cassettes (VHS), cassette discs (CD) and digital video devices (DVD).

Audio tape compact cassettes were and still are a successful educational tool. Audio tape compact cassettes became readily available in the late 1960s as an alternative to the stationary (non-handheld/pocket portable) vinyl record. Heavily supported by the music industry, audio tape compact cassettes commonly referred to as cassette tapes; led the way for portable audio information. This became a revolutionary tool in education, specifically distance education. Information was now available portably via cassette tape, anytime anywhere. Educators used this technology for purposes such as recording lectures and teaching/learning foreign languages. This technology was so successful that it advanced into what are now known as cassette discs (CD). A CD is the same technology as a cassette tape, meaning it records and can replay sound, except a CD is a digital version (Westera, 2012).

With advancements in film, television, and audio, the video home system (VHS tape) and personal video recorder were born. A video recorder is a device to record a certain amount of video footage via television in order to watch it at a later time. The footage is recorded onto a VHS tape, which is very similar to the technology of an audio cassette tape, only with images and sound combined together. This technology made it possible for educators to record educational television shows such as *School House Rock* and *Bill Nye the Science Guy*, and then show/watch them in a classroom at any time. According to art educator Schwartz, studies conducted by the Agency for Instructional Technology (AIT) "indicate that television and other related technologies [videos] are

some of the most popular and widely used instructional resources in North American classrooms (Schwartz, 1997, p. 52). The VHS video tape enabled freedom in how and when educators are able to watch videos and television. With the advancement of technology, VHS tapes became obsolete and were upgraded to DVDs which are the digital version of VHS tapes, similar to the technology of CDs (Westera, 2012).

Beginning in the 1980s, educational technology had yet another substantial advancement in technology with the invention of the home computer. The term computer has been widely used over time and the earliest mechanical computer technology dates back hundreds of years. However, in terms of the electronic personal computer (PC) technology we know and use today, the beginning was in the twentieth century (Westera, 2012). It was circa 1980 when home computers were becoming popular, but it wasn't until the mid to late 1990s that computers were becoming a common household item. Affordability and accessibility of computers played a large role in educational technology. When computers became affordable to the everyday person, accessibility and ownership grew. Today, computers are readily available at many public locations such as libraries and schools as well as many private places such as offices and homes which provide multiple opportunities for computer usage. According to Greh (1997), a survey conducted through *School Arts* magazine found that around eight to ten percent or four to six thousand U.S. art teachers were using technologies, specifically computers, in their curricula. The number of art teachers using computer technology today in the twenty-first century is presumably higher; however this statistic shows the start of the classroom computer usage trend.

Now that computers are readily available to many people, a highly desirable aspect about them is the internet. The internet was first made available to the public in the 1990s and has been advancing every day since (Wikipedia, 2012). According to Internet World Stats (2012), the number of internet users worldwide increased in 1995 from 26 million to an estimated 2.2 billion in 2011 (Westera, 2012). Today the internet is filled with a plethora of information. It hosts a variety of websites with games, information, social media and just about anything one can imagine. Educators can find information to help aid in the development of lesson plans, create assignments, as well as aid students in discovery of information and creation. Art educators, Koos & Smith-Shank suggest "this [internet] technology has tremendous potential for the art education community" due to the opportunities for creating, exploring, and networking with art (Koos & Smith-Shank, 1997, p. 33). "Images that have not appeared in print, slide or poster format may be available on the [internet]" and even newly created artworks are available instantaneously, making art education that much more accessible (Koos & Smith-Shank, 1997, p. 34).

Many social media sites exist on the internet such as *Twitter*, *YouTube*, *Facebook*, *Blogger* and *Flickr* just to name a few. These social media sites are designed to socially connect people via music, videos, photographs, and general networking/communication. Social media sites allow individuals to express themselves as well as learn new information. As mentioned earlier, the current generation of youth is exceptionally technologically inclined as compared to previous generations, due to the young age of their technology experience and of media exposure. With a high level of interest in

technology, many websites are tailored to appeal to youth. One site in particular that boasts youth appeal and has become a cultural phenomenon is YouTube.

YouTube

YouTube is a video sharing site that allows a user to network, communicate, create, share, and learn. The history of YouTube began when it was founded in February 2005 by three young men; Chad Hurley, Steve Chen and Jawed Karim, who met while working at the internet based company PayPal. The idea for YouTube was said to be generated when Chen and Hurley wanted a way to upload videos to the internet to share with others. On February 15, 2005 the internet domain was activated, and on April 23, 2005 the first video titled "Me at the Zoo" was uploaded (History of YouTube, 2010). The video sharing site quickly grew with popularity and soon was attracting major investors. On October 9, 2006, Chen and Hurley uploaded a minute and a half long video to YouTube stating that the YouTube company had been acquired by Google (Snickars &Vonderau, 2009). Today YouTube is regarded as "the world's leading video community on the internet" and has transformed the way that the current generation is sharing knowledge (Snickars &Vonderau, 2009, p. 10). In 2006, *Time Magazine* cited YouTube as Invention of the Year (Anderson, 2009). Although YouTube is not "the only video sharing website on the internet," the "rapid rise, diverse range of content, and public prominence in the Western, English-speaking world make it useful for understanding the evolving relationships between new media technologies, the creative industries, and the politics of popular culture" (Burgess & Green, 2009, p. vii).

YouTube is a rather simple user friendly site with a variety of options. The website can be accessed by the web address, www.youtube.com. Anyone can view the

videos posted to the YouTube website. However, in order to post any videos or comment on any videos, or "like/dislike" videos, one must be a registered member of the YouTube website (Anderson, 2009). It is free to join and the site does give privacy options specific to the audience you want to see your videos or make comments on your videos, e.g. public, private, unlisted. When you first access the YouTube site you will see a simple search bar located at the top of the page. You can type in any key word or phrase in relation to any videos you want to find/watch. For example, if you want to find videos on how to paint with watercolor, you may type in the search bar; 'watercolor techniques' and a variety of videos related to that phrase will appear for you to choose from. Once you click on a video it will open on a new webpage and begin playing. This is when you will see all the information about that specific video including how many views the video has had, how many likes/dislikes, comments from other users, a description of the video (if available), the username who uploaded it, how many videos that specific user has uploaded, and the date it was uploaded to the YouTube website. In addition, other videos with related content are listed on the right side of the webpage. This gives the option to quickly find other videos similar to the one recently viewed. If you are a member of the site and you like the content that a specific user has uploaded, you may 'subscribe' to that person's specific YouTube channel. YouTube channels are basically just different categories such as sports, entertainment, and music. Channels also include specific member's content located all on one page. This is similar to a personal Facebook Page, only just with videos.

In addition to simply watching videos on the YouTube website, you have the option to share the videos. Even if you do not have a registered account with the site, you

still may share videos via the share button located under each video. This feature is essentially how many videos get watched and "go viral." Going viral means that a large number of people are viewing and sharing the video and it is receiving a lot of media attention at one point in time. An example of a viral video is the video titled *Charlie Schmidt's Keyboard Cat!-THE ORIGINAL!* This video has over 29,500,000 views and over 155,500 likes (Chuckieart, 2007). It was viewed and shared so many times that it has become a social phenomenon. It was even remade into a *Wonderful Pistachios* commercial aired on mainstream TV.

According to Anderson, "the cultural impact of YouTube is enormous" and "the fact that millions of people worldwide are gathering to share, view, comment on, and respond to the billions of videos is a social phenomenon" (Anderson, 2009, p. 243). Recognizing the value of the cultural, historical, and social significance of videos on YouTube is important to educators because this technology allows a connection and communication between popular culture and the technologically savvy generation of youth to the educational experience.

YouTube in the Classroom

Covili (2007) suggests that today, more than ever before, students have shorter attention spans due to large amounts of visual stimulus at a young age. With that in mind, Covili concludes that educators should channel the students' visual fascination by utilizing the current resources such as YouTube to bridge the academic world with the visual culture world (Covili, 2007). For example, art educator Mario Mendia "motivates his students' art appreciation through short stories and videos about famous artists and their work in relation to everyday life" (Stokrocki, 1997, p. 99). Using this form of

technology, Stokrocki suggests that "Mario is able to connect their popular interests in electronic media with art history" (Stokrocki, 1997, p. 99). According to Jones & Cuthrell "studies show positive gains in student outcomes as a result of the integration of video technology in instruction" (Jones & Cuthrell, 2011, p. 75). New creative and educational outlets such as YouTube are allowing more people than before to communicate worldwide via digital technology. This educational digital communication is not only free, but it is large in volume with valuable resources (Callisen & Adkins, 2011). Additionally, the easy accessibility of YouTube is a notable benefit when compared to using traditional videos and DVDs. Salpeter (2009) questions whether textbooks are the best use of educational funds due to many other digital resource options. YouTube has the added benefit of a free price tag, leaving no issue for competing with funds. Specifically in the art classroom, YouTube can be used as an additional resource for art history, artist talks, and visual demonstrations. Sweeny states that "there is a whole sub-genre of videos that educate the viewer on particular artistic techniques or approaches" (Sweeny, 2009, p. 205). Virtual field trips to art galleries and art museums are also possible via the internet (Heise & Grandgenett, 1996).

On the other hand, even though these virtual resources are free, schools still have to invest in the digital technologies. This includes a financial investment in computers, internet access fees, facilities, training and skills which may present issues (Heise & Grandgenett, 1996). Not all schools have the funding for computer and internet usage, which leaves some schools without the digital option. Other schools that may be able to afford the digital technology price may run into security issues. Not all websites are academically friendly or age appropriate for children/students. The schools are then

forced to create some sort of protection against students viewing these websites. More often than not a website will have useful educational material but also contain some inappropriate content as well and therefore will become blocked via firewall. This is sometimes the case with YouTube. Although YouTube is an excellent source for information, some content is inappropriate for school usage. Many schools feel they can't monitor the site well enough so they remove the option completely. This then results in a challenge for teachers wanting to use appropriate YouTube content in their classrooms. Schools must either, allow only teachers to access YouTube, or teachers must find a way to save YouTube videos and show them via saved file. Jones and Cuthrell (2011) also discuss the availability/firewall challenge and report that teachers can use the website zamzar.com as a solution. This website is supposed to allow users to legally convert videos from YouTube into savable files therefore resolving the issue.

Another concern in regards to YouTube video usage is quality of content and selection of useful videos. Since there are no official guidelines regarding what is good and what bad for video content, one must use one's own judgment. Educators should be able to differentiate what is good and what is bad, as well as what will actually assist in the learning process. In the book *Going Google: Powerful Tools for 21st Century Learning*, Covili suggests three tips. The first tip is to preview any videos before using them to determine appropriateness and relevant content. This seems rather obvious, but still needs to be noted in case students try watching unapproved videos on their own in the classroom. Some videos may not be inappropriate, but they may be a waste of time; teachers have to remember YouTube is an open source for anyone to post anything. The second tip is to download any videos before class even starts. Some internet connections

may be poor which could result in spending the whole class waiting for the video to download or buffer. The third tip is to be sensitive to any policies a school or district may have regarding video content and internet usage. YouTube can stimulate controversy among parents and community members. Opening up an unfiltered public forum to children may be frowned upon by some parents and cause concerns (Covili, 2012). Overall YouTube has benefits as well as pitfalls, so it is up to educators to decide what is right for their students, classroom, and community.

Chapter 3

METHODS

Type of Research Design

This research study used the Alternative Treatment Post-Test-Only with Nonequivalent Groups Design (experimental). This is a design that is implemented after a treatment. In this case, two different groups of students participated. One group was the control group (Group A) with regular instruction, and the other group received the treatment (Group B). Both groups, A and B, were administered the same post-test procedure by the teacher, which is shown in figure 1 below. This type of design uses a nonequivalent comparison group (Creswell, 2009).

Group A X1----------0

Group B X1----------0

Figure 1. Nonequivalent comparison

Population/Sample/Participants

The population for this research study consisted of students at Freemont Junior High School in Mesa, Arizona, specifically in the art class. The participants of this study were students in seventh or eighth grade and between the ages of eleven and fourteen. A total of two art classes participated, which equals sixty eight students. Participants were not randomly selected by the researcher. They were selected based on which class they were already enrolled in at the school; convenient sampling. The treatment class was

selected blindly by putting two separate pieces of paper with class period 3 on one and class period 4 on the other, and then are drawn out of a hat. The first piece of paper drawn determined the treatment group.

Intervention

Since this is an experimental research design an intervention was necessary. This intervention took place with the treatment group (Group B). The control group (Group A) received regular teacher centered instruction on how to construct a clay rattle sculpture with in-person teacher demonstration. The treatment group (Group B) received the intervention/treatment which consisted of instruction via YouTube video. Students in this group watched a video that explained and demonstrated how to construct a clay rattle sculpture. Before the demonstrations each group received the same introductory project information (See Appendix A: Daily Outline/Teacher Handouts). During instruction each group received the same basic concepts from the teacher or video, and had the same class time allotted. Both groups received instructional support from the teacher if needed after the demonstrations.

Delimitations

There are specific aspects of this study that I controlled. The classroom teacher normally uses a document camera to display a close up of the demonstration she is giving. The document camera is an expensive tool and is generally not accessible to all school classrooms. With that in mind, I wanted to make this study more generalized to the regular art classroom that does not have access to expensive tools such as the document camera. I controlled this part of the study by asking the art teacher to not use

the document camera tool for this specific art project. Another major aspect of this research study that I controlled was the YouTube video.

Selection and Use of Videos

Before beginning this study, I had the choice of using a preexisting YouTube video for demonstration, or creating my own YouTube video. YouTube has an immense number of videos with vast content; however I did not find the specific project that I was looking for. Some videos on how to make a clay rattle existed, but did not fit the criteria that I had planned to emphasize. I wanted to make sure the video was of quality content as well as have advantageous viewing angles, frames, and sound. This meant I had to create and post a new tutorial video on YouTube. I had little to no previous experience using a camcorder or making and editing videos. After trial and error I ended up using a high definition (HD) iPhone and iMovie to record and edit my production. This was a fairly simple method that proved effective for my video tutorials. The three part YouTube video tutorials can be accessed at (How to Make a Clay Rattle- Part 1) http://youtu.be/MBvm8Krq0Bs, (How to Make a Clay Rattle- Part 2) http://youtu.be/PVZpZ5aeSj4, (How to Make a Clay Rattle- Part 3) http://youtu.be/XMVOmLppjx8. An outline of the videos can also be seen in Appendix B: Outline of YouTube Video Content. With simple trial and error as well as viewing of other YouTube videos, I was able to come up with a few key video components that would provide evidence of whether YouTube can be beneficial in the art classroom.

First, if a video is projected on a wall ten times larger than a normal teacher's hand demonstration, most students will have an equal view of the demonstration

constituting no bad seats in the classroom. The student view then becomes unobstructed, whereas in a normal demonstration, someone or something may obstruct a student's viewing ability. The specific classroom in this study was equipped with a computer and projector which gave students the chance to experience a large visual display during this study. I also discovered that while making my video, that including slow frame shots, freeze frames, close ups, and short captions, might be beneficial. These video qualities gave students a chance to see details that may otherwise have been overlooked or missed.

Data Collection

I collected quantitative data for this in the form of a pre-questionnaire, post-test questionnaire, and scoring guide. Students in both groups each filled out a pre-questionnaire (See Appendix C: Pre-Questionnaire) and then received instruction, either in person (teacher-centered) or YouTube video. After instruction, the teacher read the technical ability task (See Appendix D: Technical Ability Task) to the students, and then the students created a clay rattle sculpture. The trained scorer and I scored the students' clay rattle sculptures using the scoring guide (See Appendix E: Scoring Guide, and Appendix F: Scorers' Spreadsheet). This instrument was in the form of a post-test rubric that rates/scores each clay (rattle) sculpture on a four point scale on three criteria: joint construction, free standing/stability, and surface quality/texture. In addition, the treatment group (YouTube) participants received a five question post-test questionnaire to complete by hand (See Appendix G: Post-Test Treatment Group Questionnaire). This survey was only for the treatment group and was not distributed to or collected from the control

group. In addition, I collected qualitative data for this study in the form of classroom observations.

Data Analysis

After the students in both groups had constructed and completed their clay (rattle) sculptures, the trained scorer and I evaluated the rattles using the post-test rubric (Appendix E: Scoring Guide). The trained scorer and I evaluated both groups A and B using the same post-test. The scoring was done semi-blind without the clay sculptures being labeled by group A or B for the trained scorer. As a scorer, I knew which sculptures belonged to which group, due to labeling and coding processes. After the trained scorer and I scored all of the clay rattle sculptures, I compared the control group (Group A) and the treatment group (Group B). I averaged and analyzed scores from each group to determine what effect the YouTube instruction had on the students and clay sculpture product, if any. I compared the pre-questionnaire survey responses from both groups against each other to gather information. I also compared the treatment groups' clay sculptures with the treatment group post-questionnaire survey responses to further explore the effect of YouTube. I then compiled conclusions and possible further research questions.

Ethical Issues

As the researcher, I have taken various measures to ensure this research is conducted ethically. I applied and was granted research approval from the Arizona State Institutional Review Board (IRB) which ensures my study fits safely within ethical and just research (See Appendix H: IRB Exemption Status Granted). I also requested

permission from the principal and art teacher at Freemont Junior High for acceptance and willingness to participate in this research study, which was granted (See Appendix I: Principal Letter of Permission). In addition I notified students in the specific art classroom about the study, and gave them the option to participate or opt out. The notification included a statement that the study poses little to no harm to them (the students), and will not affect any grades or personal relationships if permission was not granted (See Appendix J: Student Recruitment Script).

Within the data portion of the study, I have removed all names and identifiers from the data to protect the participants. I assigned numbers and letters for each group and data set, ensuring that participants will be anonymised and protected. I also selected a plan of study that would ensure all students of an equal opportunity to learn, not leaving one group of students will an unfair disadvantage.

Chapter 4

FINDINGS

Gender Distribution

The two participating art classes had a total of sixty-eight students, with fifty females and eighteen males. However, the number of participating students was fewer due to absences, incomplete projects, or transfer of classes. All students in both classes gave permission to participate in this study. The total number of participants at the end of the study equaled fifty-five, with thirty-eight total females and seventeen males. Figure 2 shows a visual chart of the class size with male/female breakdown.

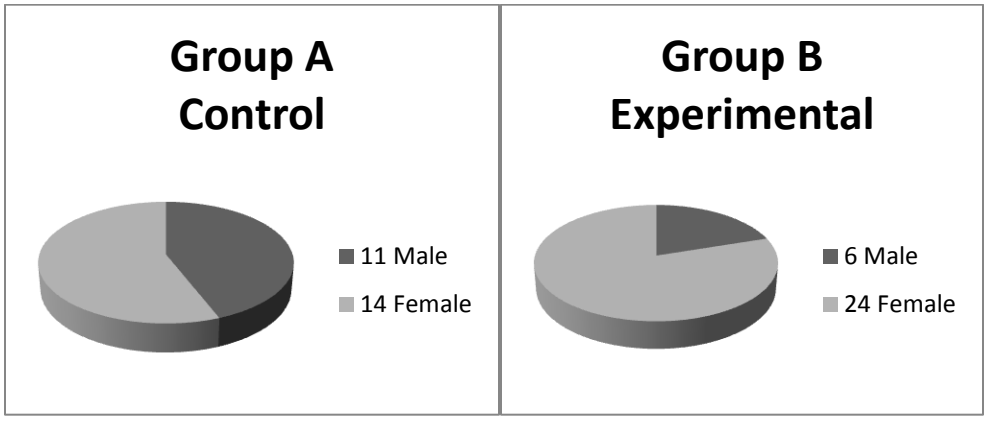

Figure 2. Visual representation of student participants

The control group (Group A) consisted of eleven males and fourteen females, totaling twenty-five participants. The experimental group (Group B) consisted of six males and twenty-four females, totaling thirty participants.

Pre-Questionnaire

The Pre-Questionnaire is a list of short-answer questions given to both the control group (Group A) and the experimental group (Group B) in order to get a better understanding of previous experiences with art media, art courses, and YouTube exposure (See Appendix C: Pre-Questionnaire). Students had the option to skip any questions they did not want to fill out, which resulted in some questions with fewer total responses than the total number of participants per group. Table 1 shows responses from the first question on the pre-questionnaire about how many students have worked with or made anything out of clay before.

Table 1. Previous clay experience

Group	Yes	No	Percentage
Control Group (Group A)	16	8	64% Yes
Experimental Group (Group B)	20	9	67% Yes

A total of 64% of students in the control group (Group A) had previous exposure to the clay medium, 32% have had previous exposure to clay before, and one student or 4% did not respond. In the experimental group (Group B), 67% of students had previous exposure to the clay medium, 30% have not had previous exposure to clay before, and one student or 3% did not respond. The experimental group has a slightly higher number of students who had been exposed to clay before, however both groups are within a 60% exposure rate to clay.

Question number two on the pre-questionnaire asked students if they have taken an art class before, if yes, how many years, and, if yes, what kind of mediums they used.

Table 2 shows the number of students per group who have or have not taken an art class before.

Table 2. Previous art class experience

Group	Yes	No	Percentage
Control Group (Group A)	17	7	68% yes
Experimental Group (Group B)	18	11	60% yes

A total of 68% of students in the control group had previously taken an art class, 28% of students had not taken an art class, and one student or 4% did not answer. A total of 60% of students in the experimental group reported having previously taken an art class, 37% of students had not taken an art class, and one student or 3% did not answer. The control group had a slightly higher percentage of students who had previously taken an art class, however both groups remain in the 60% range.

Table 3 shows part A of question two on the pre-questionnaire illustrating how many years each student has previously taken an art class. The control group (Group A) has the highest number of students who have taken "one year or less," whereas the experimental group (Group B) has the highest number of students in the "unspecified elementary years" category. Both the control group and the experimental group have a similar number of students noting "1-2 years," "3 years," and "7 years." The control group (Group A) and the experimental group (Group B) both had students reporting similar years of experience in all year categories except in "1 year or less" and "unspecified elementary years" where the numbers were more than double the opposite group.

Table 3. Previous art class years

Number of years	Number of students in Control Group (Group A)	Number of students in Experimental Group (Group B)
1 year or less	6	3
1-2 years	3	3
3 years	2	2
4 years	2	1
6 years	1	0
7 years	1	1
Unspecified elementary years	0	7

Table 4 shows part B of question number two on the pre-questionnaire illustrating what types of art classes and mediums students have previously used in each group.

Table 4. Types of art classes and mediums

Art class/Mediums	Number of students in Control Group (Group A)	Number of students in Experimental Group (Group B)
Elementary/General Art	7	5
Introduction to Art	2	2
Private Art class	0	2
Pastels	2	0
Charcoal/Drawing	6	4
Coloring	2	1
Paint	5	5
Clay	4	3
Variety/All types	0	4

The highest number of students in both groups reported “elementary/general art” as an art class previously taken. The control group (Group A) reported 28% of students having taken one or more classes in “elementary/general art” whereas the experimental group (Group B) reported only 17% in this category. Charcoal/drawing and painting are the two

mediums noted as most used in previous art classes by both the control group and the experimental group.

Question number three on the Pre-Questionnaire asked students if they had ever watched a YouTube video before, and if so what kind had they seen, and how often they watched YouTube videos. Table 5 shows the number of students that had or had not seen a YouTube video before.

Table 5. Previous YouTube video exposure

Group	Yes	No	Percentage
Control Group (Group A)	22	2	88% yes
Experimental Group (Group B)	29	0	97% yes

The experimental group (Group B) reported a higher number of students who watched a YouTube video with 97%. The control group reported a slightly lower number of students who watched a YouTube video before with 88%. In addition, 8% of students in the control group (Group A) noted to never had seen a YouTube video before.

Part A of the third question on the pre-questionnaire asked about the types of videos students have seen. Table 6 illustrates the YouTube video categories mentioned per student in each group.

Table 6. Types of YouTube videos previously seen

Video Types/Category	Number of Students in Control Group (Group A)	Number of Students in Experimental Group (Group B)
Music	10	13
Comedy/Humor	6	13
Tutorial/Educational	4	3
Popular Cartoons	0	3
Variety/All kinds	5	5
Other	2	7

The "music" category had the highest number per group with 40% of students in the control group (Group A), and 43% of students in the experimental group (Group B). The "comedy/humor" category has the next highest with 24% in the control group (Group A) and 43% in the experimental group (Group B).

Part B of the third question on the pre-questionnaire asked students how often they watched YouTube videos. Table 7 shows the amount of time divided into categories with the number and percentage of students with that response in each group.

Table 7. How often YouTube is watched

Amount of Time	Number of Students in Control Group (Group A)	Percentage of Students in Control Group (Group A)	Number of Students in Experimental Group (Group B)	Percentage of Students in Experimental Group (Group B)
Everyday	5	20%	14	47%
Almost everyday	4	16%	3	10%
3-4 times a week	2	8%	1	3%
Once a week or less	3	12%	1	3%
Sometimes	5	20%	5	17%
Not often	1	4%	4	13%
Not sure	2	8%	1	3%

The control group (Group A) reported the highest number of students that watched YouTube "everyday" and "sometimes," with a 20% student response in each category. The experimental group (Group B) had a significantly higher number of students that watched YouTube "everyday" with a reported 47%. The experimental group (Group B) also had a high response in the "sometimes" category with a reported 17%, which is similar to the number in the control group (Group A) at 20%. These numbers show that more students in the experimental group (Group B) were exposing themselves to YouTube more often than students in the control group (Group A).

Final Products and Rattle Statistics

After the teacher showed the YouTube demonstration or demonstrated herself, students constructed clay rattle sculptures (See Appendix K: Final Student Projects). Students in both groups had the freedom to create any type of rattle as long as it followed

the guidelines listed in the Technical Ability Task handout (See Appendix D: Technical Ability Task). When looking at the surface quality/texture, some students included intentional texture other than smooth. In the control group (Group A) two students created a bumpy surface and one student created feathers. In the experimental group (Group B), four students created fur texture, three students created scales, one student created feathers, and three students created a bumpy surface. Table 8 visually shows the clay rattle textures per group.

Table 8. Rattle Textures

Texture	Control Group (Group A)	Experimental Group (Group B)
Feathers	1	1
Bumpy	2	3
Fur	0	4
Scales	0	3

The control group (Group A) only included three students or 12% of the total number of clay rattles with a texture other than smooth. Whereas, the experimental group (Group B) included eleven students or 37% of the total number of clay rattles with a texture other than smooth. Both groups included at least one clay rattle with a "feather" or "bumpy" texture. However, the control group and the experimental group were separated by a 25% difference with the experimental group having more clay rattles with texture.

In regards to rattle type, three categories emerged; animal, object, and other. The "animal" category had the highest number rattles in the control group (Group A) with 12 or 48% as well as the highest number in the experimental group (Group B) with 22 or 73%. The "other" category had the second highest amount of rattles in both groups with

eight or 32% in the control group (Group A) and four or 13.3% in the experimental group (Group B). In addition the "object" rattle category has five or 20% of rattles in the control group (Group A), and four or 13.3% in the experimental group (Group B). These numbers are illustrated in figure 3.

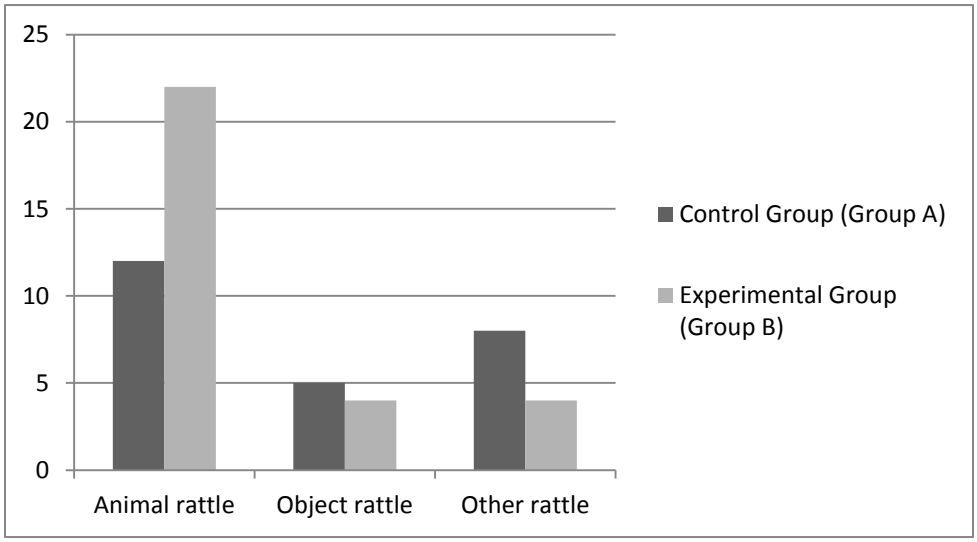

Figure 3. Clay rattle categories

In addition to clay rattle types, each category had specific animal types, object types, or other. The control group (Group A) and the experimental group (Group B) were mostly different in designs, however a few rattles were of the same "animal" design. See table 9 and table 10 for a visual list. Both the control group and the experimental group included rattles shaped like monkeys, owls, and frogs. The "object" and "other" categories remained different.

Table 9. Control group rattle types

Animal	Object	Other
Monkey	Pie	Abstract
Pig	Globe	Monster
Frog	Sun	Head
Elephant	Mushroom	Yoda
Spider	Snowman	Dragon boy
Chicken		
Owl		
Hamster		

Table 10. Experimental group rattle types

Animal	Object	Other
Bear	Cupcake	Boy
Monkey	Skull and Bones	Spiderman
Owl	Watermelon	Sea life scene
Bunny		Unknown
Dragon		
Penguin		
Dog		
Frog		
Octopus		
Whale		
Giraffe		
Cat		
Dinosaur		

Students made different shaped clay rattles, which included three categories; head, whole body and object/other. The three shape categories for both the control group (Group A) and the experimental group (Group B) are visually represented in Figure 4.

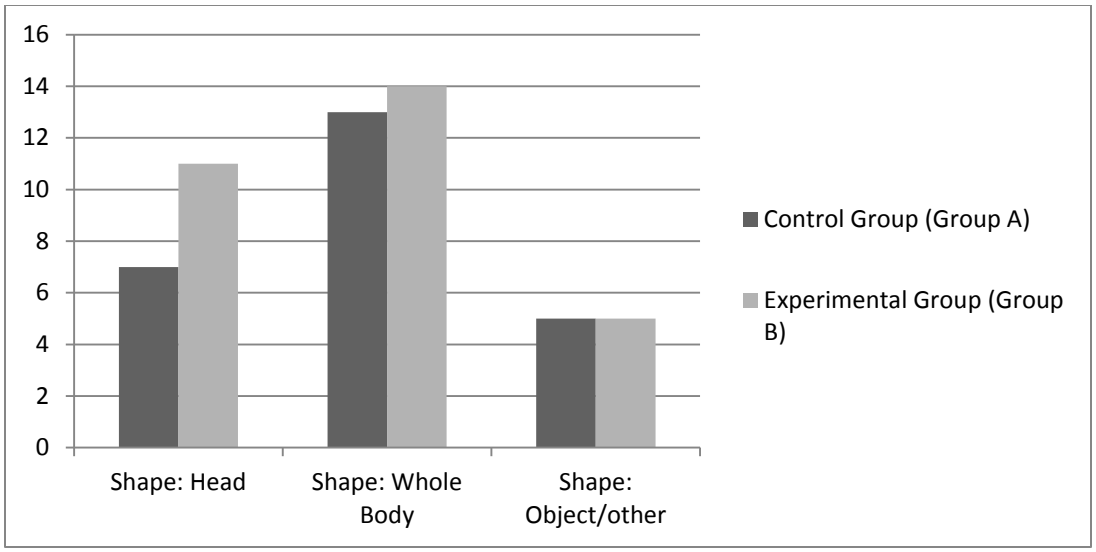

Figure 4. Rattle shapes

The category with the highest number of rattles was the "whole body" rattle category. The control group (Group A) had 13 or 52% and the experimental group (Group B) had 14 or 46.7% in the "whole body" category. The "head" category had a total of seven or 28% of rattles in the control group (Group A), and the experimental group (Group B) had a total of 11 or 36.7%. The "object/other" category had the fewest number of rattles with five or 20% in the control group (Group A), and five or 16.6% of rattles in the experimental group (Group B). Overall, the experimental group had a higher percentage of rattles in the "head" category, but the control group had a higher percentage of rattles in both the "whole body" and object/other" categories.

Scoring Guide and Spreadsheet

The student rattle scores from the trained scorer and the researcher were combined into one average score per student, per category, per group. Each category scored (joints, free standing/stability, surface quality/texture) was worth four points each

for a total possible score of twelve. Figure 5 shows a visual chart of average scores for both the control group (Group A) and the experimental group (Group B).

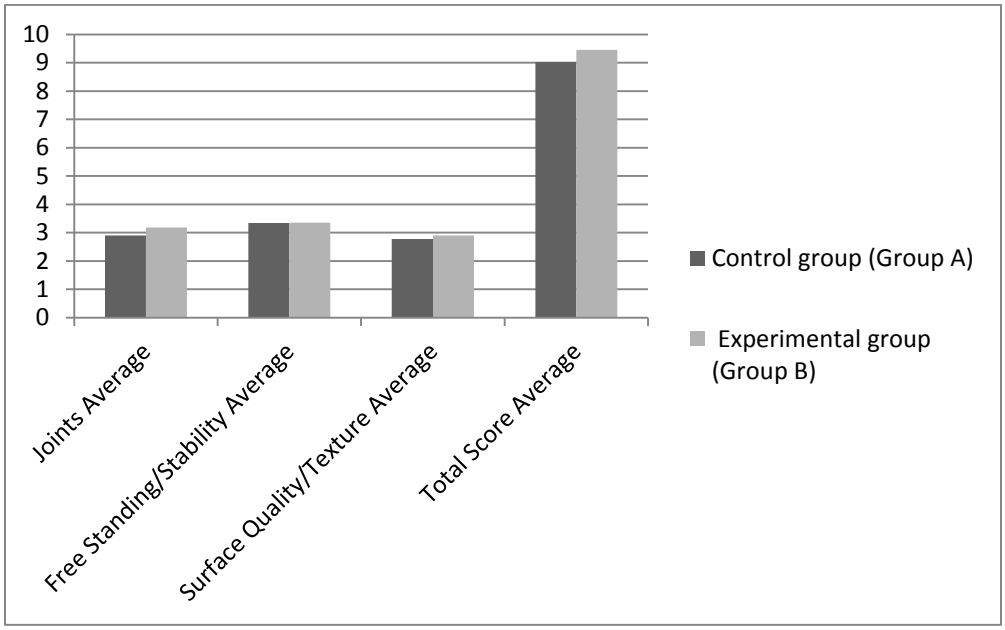

Figure 5. Total averages per group

The overall average for the experimental group (Group B) was slightly higher than the control group in all four categories. The free standing/stability category appeared to almost have an equal average score, but was lower in the control group (Group A) by .01 points.

The rattles from the control group (Group A) and the experimental group (Group B) were also broken down into median and mode for each scored category. See table 11 for a visual representation of these numbers.

Table 11. Median and mode

Category	Rattles in the Control Group (Group A)	Rattles in the Experimental Group (Group B)
Joints Median	3	3
Joints Mode	3	3, 4
Free Standing/Stability Median	3.5	3.5
Free Standing/Stability Mode	4	3.5, 4
Surface Quality/Texture Median	3	3
Surface Quality/Texture Mode	3	3

Table 11 shows the rattles in the experimental group with a higher score than the control group in the joints mode category. The other median and mode categories had equal scores between both groups.

Post-Test Questionnaire

Only students in the experimental group (Group B) completed the Post-Test Questionnaire (See Appendix G: Post-Test Questionnaire). They filled out the questionnaire after the completion of the clay rattle project. The post-test questionnaire presented students with one previous question from the pre-questionnaire, as well as four new questions about individual student interest in YouTube and preferred teaching style. Question one on the post-test asked students if they had ever watched a YouTube video before. After watching the YouTube instructional video on how to make a clay rattle, 30 or 100% of the students responded with a "yes" answer.

Part A of question one on the post-test asked students what type of YouTube videos they had seen. This question was also previously asked on the pre-questionnaire. As shown in table 12, the most popular video category was “music” with 53% of students mentioning they had seen a music video on YouTube. The second highest noted category by students was “tutorial/how-to/DIY” with 47% of the experimental group mentioning this category. Students noted both of these categories more times by students on the poet-test than previously on the pre-questionnaire (See Table 6. Types of YouTube videos previously seen).

Table 12. Post-Test experimental group YouTube video types

Category	Number of times noted	Percentage per category
Music	16	53%
Tutorial/How-to/DIY (Do It Yourself)	14	47%
Other/Entertainment	8	27%
Comedy/Humor	6	20%
All kinds	4	13%
Popular Cartoons	3	10%
Sports	2	7%

Part B of question one on the post-test asked students how often they watched YouTube videos. This question was also previously asked on the pre-questionnaire. As shown in table 13, 11 or 37% of students responded that they watched YouTube videos “everyday.” This category number was down by 10% from the previous pre-questionnaire responses (See Table 7. How often YouTube is watched). The other five “amount of time” categories fluctuated from 10% to 13%.

Table 13. Post-Test how often YouTube is watched

Amount of time	Number of Students	Percentage
Everyday	11	37%
Almost everyday	4	13%
3-4 times per week	3	10%
1-2 times per week	3	10%
Once in a while	4	13%
Not often	3	10%

Part C of question one on the post-test then asked students if they liked to watch YouTube videos and why or why not. A total of 28 or 93% of students responded "yes," they liked to watch YouTube videos, two or 7% responded that they "sometimes" liked to watch YouTube videos, and zero students responded with a "no." The reasons why students liked to watch YouTube videos appear in table 14. Two students also noted "sometimes," responding that it depends on the video.

Table 14. Post-Test reasons for liking YouTube

Reasons Why	Number of students	Percentage
Learn new skill/Comprehension	10	33%
Entertainment/Funny	17	57%
Passes time	3	10%

The second question on the post-test asked students to explain how the multiple-part YouTube videos on how to make a clay rattle were interesting or non-interesting and why. Figure 6 illustrates the ratio of students' opinions on the YouTube videos. A total of 24 or 80% of students noted that the video was interesting, four or 13% noted that the video was non-interesting, and two or 7% of students were indifferent.

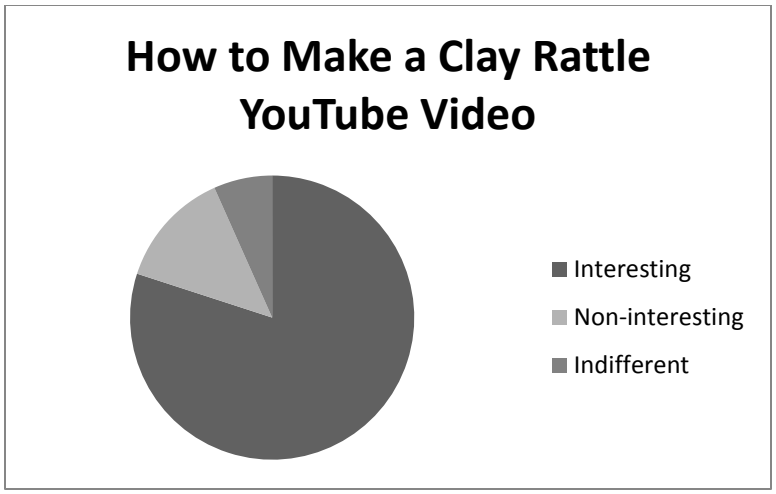

Figure 6. Interesting or non-interesting YouTube video

Student reasoning for the videos varied, but the majority with 22 or 73% noted that the videos on how to make a clay rattle were interesting because they were informative/instructional. Table 15 shows the student reasons why s/he thought the videos were interesting or non-interesting as well as the number of students that reported each reason.

Table 15. Reasons for interesting or non-interesting video

Interesting:	Number of students:	Non-interesting:	Number of students:	Indifferent:	Number of students:
Informative/ Instructional	22	Did not help a lot	1	Okay, indifferent about art	1
Never seen anything like it before	2	Really long	2	Not bad or good, a little confusing	1
Entertaining	1				

Question three on the post-test asked students if they had the choice of a YouTube video or regular teacher-centered demonstration/instruction for art projects, which would they choose and why. A total of 12 or 40% of students responded with a preference for YouTube, 14 or 47% responded with a preference for the regular teacher, two or 6% responded with a preference for both, and two or 6% noted unsure which they preferred. These numbers appear in figure 7.

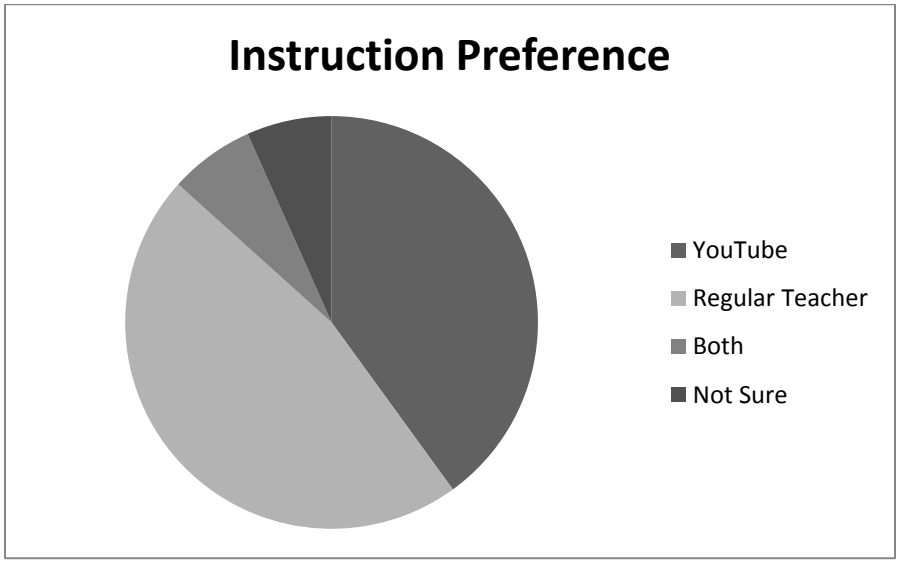

Figure 7. YouTube or regular teacher instruction

Table 16 presents reasoning as to why students preferred one method over the other Students with the YouTube preference noted specific video qualities whereas students with the regular teacher preference mainly noted the teacher's ability to answer questions.

Table 16. Reasons for instruction preference

YouTube Preference	Number of Students	Regular Teacher Preference	Number of Students	Both	Number of Students
More entertaining	2	Teacher can help/answer questions when needed	6	Both have good merits, like them both	1
Better view/sound	3	Teacher enthusiasm	1	Both are fun	1
Can replay videos	3	Better explanation from teacher	2		
Easy to understand	3	Better/easier to see in person than on a screen	3		
Easy to use	1	More interactive	1		
Not sure	1	Easier	1		

Question four on the post-test asked students how the specific multiple part YouTube videos on how to make a clay rattle helped to understand what they were going to make or why it did not help. A total of 30 out of 31 responses noted that the video helped. Table 17 shows reasons why the video helped students understand.

Table 17. Reasons the YouTube video helped with construction

Reasons why the video helped:	Number of times noted by student responses
Step-by-step	10
Understanding of construction	8
Clear explanation/easy to understand	4
Helped, no explanation	4
Variety of tips	1
Visual explanation, not printed instructions	1
Could see the demonstration better	1
Could replay the video at any time	1

The "step-by-step" reason was the most noted explanation as to why the video helped with 10 or 33% of student responses. The second highest reason for the video helping was "understanding of construction" with eight or 27% of student responses. Only one student noted that the video did not help, responding that the video was hard to understand.

The fifth and final question on the post-test asked students if they would prefer their teacher to use more YouTube videos for instruction and why or why not. A total of 17 or 57% of students responded "yes," nine or 30% responded "no," two or 7% responded "both," and two or 7% of students responded with "does not matter." Table 18 shows reasons as to why or why not.

Table 18. Preference for more/less YouTube videos

Why, More YouTube Videos	Number of students	Why Not, less YouTube videos	Number of students	Both	Number of students
Better understanding of what to do	6	Preference for the art teacher demonstration	3	Both are helpful	2
Instruction for new things	4	Easier to see/ understand from a live person	3	Doesn't matter, students will learn either way	2
Can rewind/replay the videos	4	Videos might not have every step	1		
Everyone can see/can see better	3	Preference towards more interactive things	1		
Able to see a finished product in the video	1	Able to ask more questions in person	1		
Interest in art videos	1				
Entertaining/ drawn to video media	1				

The majority of responses as to why the art teacher should use more YouTube videos for demonstration were related to student preference. A total of twenty "why" responses were noted, nine "why not" responses were noted, and four "both" or "does not matter" responses were noted. Ten out of twenty of the "why" student responses relate to specific video qualities.

Overall, students in both groups were largely similar regarding prior experience resulting in comparable control and experimental groups. Scores from the scoring guide were also similar in both groups, but slightly higher average scores in the experimental

group overall. Findings in this study suggest a slight student preference for YouTube videos. Findings on the use of YouTube videos for demonstration also point to a slight benefit in clay construction abilities among middle school students. Analysis and discussion of these findings appear in the concluding chapter.

Chapter 5

DATA ANALYSIS, CONCLUSIONS AND IMPLICATIONS

At the beginning of this study I proposed one major research question; What, if any, difference is there between the effectiveness of YouTube instruction and regular art teacher instruction on middle school students' ceramic construction abilities? After compiling the data from the one-and-a-half week classroom lesson, I have drawn several conclusions within three related categories; quantitative conclusions, qualitative conclusions, and the overall conclusion to the major research question.

Discussion of Quantitative Conclusions

The scoring guide was a test designed to quantitatively measure three specific clay construction abilities; joints, free standing/stability, and surface quality/texture. The trained scorer and I were able to use this scoring guide to measure results from individual students in each group which enabled a comparison between the control group and experimental group.

After all scores were averaged and compared (See Figure 5. Total averages per group) it was clear that the experimental group (Group B) had slightly higher scores in total. Although there were no statistically significant differences between the control group and the experimental group, some factors may have affected the results. One instance is in relation to the variety of textures displayed among both groups. Both the control group (Group A) and the experimental group (Group B) represented a surface texture other than smooth on several rattles (See Table 8. Rattle Textures).

The experimental group (Group B) displayed a total number of rattles representing texture with eleven, whereas the control group (Group A) only had a total of

three rattles that displayed a texture other than smooth. Fur and scales were not represented in the control group (Group A) as they were in the experimental group (Group B). This is possibly because the YouTube video demonstration that the experimental group (Group B) watched, spent a large amount of time demonstrating how to make a variety of textures. The control group (Group A) also received some demonstration of texture during regular teacher demonstration; however from observation, I noted that the texture explanation was very quick and un-emphasized. The teacher's short explanation of texture may have been due to time constraints or simply forgetting to explain something to the students. With a video, everything is planned out and recorded. If one forgets to add something or makes a mistake, one can just re-record the video and add those things. Teaching however is different; the teacher only gets one shot and no real re-dos which can result in unintentionally omitting important or helpful information. With that said, I conclude that in this instance, the video may have had a benefit over the regular teacher instruction. The video was able to thoroughly explain all details and processes, resulting in more textures represented in the control group (Group B) rattle products.

Additionally, the "joints" category in the experimental group (Group B) had a higher mode number than the control group (Group A) (See Table 11. Median and Mode). As displayed in Table 19, the experimental group had two mode numbers that occurred more times than the one mode number in the control group.

Table 19. Comparison of joints mode scores

Joints Score	Control Group (Group A)	Mode	Experimental Group (Group B)	Mode
4	3		**9**	4
3.5	5		4	
3	**7**	3	**9**	3
2.5	4		5	
2	6		3	
1.5	0		0	
1	0		0	

The higher score in the experimental group may have been directly related to the video demonstration. It is possible that students were able to understand the instructions more clearly due to better explanation, view, and sound from the video. As noted by students in question number four on the post-test questionnaire (See Table 17. Reasons the YouTube Video Helped with Construction), the videos on how to make a clay rattle helped with "understanding of construction," had a "clear explanation" and "variety of tips," as well as the benefit of "could see the demonstration better" and "could replay the video at any time." In addition, ten students noted that the "step-by-step" nature of the video was helpful, which conceivably could have helped students recall specific steps on attaching joints, resulting in higher scores with the scoring guide. Overall, the experimental group "joint" category scores were only slightly higher than the control group. However, with evidence from the post-test questionnaire, I can conclude that the YouTube videos may have played a factor in the experimental groups' higher resulting scores.

The third and last category that the scoring guide measured was "free standing/stability." Both the control group (Group A) and the experimental group (Group

B) had almost identical averages for “free standing/stability” (See Figure 5. Total averages per group), however the control group (Group A) was slightly lower by .01 point. The median and mode numbers were also very similar as displayed in Table 11. Median and Mode. The parallel results lead me to consider that both the YouTube videos and teacher-centered instruction were equally effective. To further support this assumption, I looked at question number five on the post-test questionnaire which asked students in the experimental group if they would prefer their teacher to use more YouTube videos, and why or why not (See Table 18. Preference for More/Less YouTube Videos). The question may have only included responses from the post-test, however students supported both instruction methods, which could possibly help explain the similar scores further supporting both instruction methods. In response to this post-test question, students noted that YouTube videos provide a “better understanding of what to do,” the ability to “rewind/replay the videos” and “everyone can see/can see better,” as well as the ability to “see the finished product in the video.” In addition, one student particularly emphasized that kids/students are naturally “drawn to video media.” On the other hand, students also noted that the regular teacher-centered instruction is better because it is “easier to understand from a live person,” students can “ask more questions in person,” and that students have a general “preference for the art teacher demonstration” and “more interactive things.” Students supported both instruction methods equally on the post-test, and gave reasons as to why one method may be more beneficial over the other. In this instance, I conclude that both the YouTube video instruction and the regular teacher-centered instruction were likely of equal value to students in relation to “free standing/stability” scores.

Discussion of Qualitative Conclusions

All qualitative data in this study came from classroom observations. While the students in the experimental group (Group B) were watching the video, I noted a few observations regarding attentiveness and behavior. During the first YouTube video, all students appeared actively engaged by watching attentively and taking notes about the demonstration. During the second YouTube video, most students were still engaged but a little less intently. After the third YouTube video was playing, I noticed a few students begin to get anxious by squirming in their chairs and casually looking around at other things besides the video. This may have been the result of length of the videos. The first and second YouTube videos were only about five minutes each whereas the third and last video was more than fifteen minutes in length. The total video series length was approximately twenty-three minutes, which was twice as long as the normal teacher-centered demonstration that the students are used to. Students in the experimental group were able to see the entire process from start to finish, however the amount of video demonstration time took up the entire class period for that day.

On the other hand, students in the control group (Group A) received regular teacher-centered demonstration from their art teacher. From observation, this demonstration was only about ten to fifteen minutes and appeared slightly rushed. Students in this group did not get to see the entire process and were able to begin their project right after the demonstration. Students in the control group may have benefitted from seeing the entire process from start to finish, however it is not possible for the teacher to demonstrate everything in one class period due to time constraints. With that in mind, it seems as if students in the experimental group had a slight advantage with the

YouTube videos in regards to seeing the entire process, even if it took an entire class period and some students became disengaged.

In addition to observations of the demonstration process, I observed the amount of time students utilized the YouTube videos. Throughout the experimental group student work-time, I noted a handful of students re-watching the YouTube videos. The reasons for re-watching appeared to be for clarification of a question or to see a step/process demonstrated again. In addition, all absent students who missed the demonstration referred to the video for demonstration when they returned to class. The YouTube videos provided help to the students about basic construction for the project, which enabled the teacher to walk around the classroom and monitor her class more efficiently. The teacher was also able to spend more time with students who needed extra help because she was not being called in every direction for a question that could be answered via the video. Overall, the observational evidence lead me to conclude that the YouTube video was more time efficient in regards to student work time, student construction questions, and allowing students to see the entire process from start to finish. However one downfall to these specific YouTube videos may have been the length of the videos. The attention span of some students appeared to be slightly shorter than the total video length.

Conclusions on YouTube vs. Regular Instruction

Both the control group (Group A) and the experimental group (Group B) data offered some insight into using qualitative and quantitative methods, to answer the major research question of this study: What, if any, difference is there between the effectiveness of YouTube instruction and regular art teacher instruction on middle school students' ceramic construction abilities? By using the scoring guide, quantitative data revealed

noticeable variation in scores related to construction in both groups. Qualitative data within observational data also pointed to a slight, though not statistically significant, benefit of the experimental group due to the YouTube video demonstration capabilities. The control group (Group A) and the experimental group (Group B) both produced similar clay rattles in regards to construction abilities with only slightly higher scores reported from the experimental group. Both groups had similar total scores using the scoring guide, demonstrating that both YouTube and teacher-centered instruction was adequate for the project. After reviewing the data from the questionnaires, students seemed to have a slightly higher preference towards the usage of YouTube videos. Students presented valid points as to how and why one benefitted more from the YouTube videos.

Finally, this data shows that YouTube instruction is beneficial in many ways, however does not replace the normal classroom teacher. Many factors determine a good or bad YouTube video and without a teacher to review and assist, a lesson would not be successful. By using YouTube videos as a supplemental instruction tool in the art classroom; for parts of a lesson such as demonstration, one can receive benefits from both types of instruction. Students may get a better viewing angle with a video, as well as have the opportunity to inquire with their classroom teacher.

Implications for Further Study

This study explored a variety of levels on the effectiveness of YouTube videos vs. regular teacher instruction yet some questions remained to be considered. Questions emerging from this study include the consideration of the length of YouTube videos such as, what amount of time is appropriate for video instruction and at what amount of time

do students begin to lose interest during a video. Another emerging question resides within the ability of showing the entire process in a video. In a normal classroom demonstration, the teacher generally cannot show the entire process of a project due to time constraints. A video however, has the potential to show an entire process by recording the art project process, then condensing video footage with video editing tools. The emerging question here asks if showing the entire process does benefit students, and if so, in what ways.

Another emerging question resides around gender in this study. The majority of participants were female; students, classroom teacher, and the researcher. The experimental group was comprised of mostly female students whereas the control group was more balanced in number of male and female students. Also the classroom teacher and I are both female. This raises questions about students relating better to one sex than the other. Did students relate to me as the researcher better because their teacher is female? Do students relate better to their own sex when in a teaching position? Did the gender issue have any effect on students' relation to the demonstration and learning which in turn related to their final products? These emerging questions could be further investigated in another research study.

As the researcher, I concluded that the combination of teacher instruction with YouTube videos worked best for students in this research study. However, this may have only been the case for this group of students. One could further study the use of the combined teaching techniques to see at what level they compare to just one or the other alone. Research about teacher-centered instruction combined with video instruction could prove useful and further illustrate the benefits of digital technology.

In addition to emergent questions, an issue about research procedure arose from my study. One area that could possibly be further explored within this study is the Scoring Guide. From observation, the trained scorer did not take as much time and consideration within each category as the researcher did. The researcher read every category before scoring each clay rattle, whereas the trained scorer only reviewed the Scoring Guide categories every few rattles scored. It is unclear if this affected scores in a negative or positive way, or even at all. With that noted, potential for further refinement of the Scoring Guide may be possible.

Another possible component to further study is the technology within the art classroom. The classroom this study was conducted in had the option of using a document camera. A document camera is a tool much like a streaming video of a magnifier glass that works in conjunction with a projector. The benefit of this tool is that a live projection is made without having to prerecord a video to play. Similar to a YouTube video and projector, the document camera provides better viewing angles for the students. With these two technologies being very similar, one could research the use of a document camera vs. a YouTube video in the art classroom.

The social media component of YouTube is also an area that could be explored. YouTube provides a variety of statistics, tools, and ways to interact with other video sharers. It could prove interesting to further explore how different types of people interact with each other on the website, as well as the kinds of people who interact or post specific types of videos. An art teacher may benefit by connecting with and learning from other educators, professional artists, or simply other people. In addition one could look at who is using specific YouTube videos and for what purpose. As of April 9, 2013, the

three YouTube videos on how to make a clay rattle used in this research study had a total of 168 views. It might be beneficial to see what types of people have viewed these videos and for what purposes. This information could help to define a specific audience as well as identify potential video topics for that audience's purpose.

In all, the research conducted, along with emerging questions has allowed me as an educator, to better understand the method of YouTube as instruction. I can now better use this technology and apply it to my own classroom. In order to become the most effective teacher possible, I strive to continue refining my personal instruction, with the definitive goal of better benefiting my students.

REFERENCES

Anderson, K.E. (2009). YouTube and YouTube-iness: Educating gen m through the use of online video. In Cvetkovic, V.B, and Lackie, R.J. (Eds), *Teaching generation m: A handbook for librarians and educators* (pp. 137-156). New York, NY: Neal-Schuman Publishers, Inc.

Burgess, J. & Green, J. (2009). *YouTube digital media and society series*. Malden, MA: Polity Press.

Callisen, C.T. & Adkins, B. (2011). Pre-digital virtuality: Early modern scholars and the republic of letters. In Park, D.W., Jankowski, N.W. & Jones, S. (Eds), *The long history of new media* (pp.55-72). New York, NY: Peter Lang Publishing, Inc.

Chuckieart. (Producer). (2007, June 7). *Charlie Schmidt's keyboard cat! The original!* [YouTube video]. Retrieved from http://www.youtube.com/watch?v=J---aiyznGQ

Covili, J. (2012). *Going Google: Powerful tools for 21st century learning*. Thousand Oaks, CA: Corwin.

Creswell, J.W. (2009). *Research design qualitative, quantitative, and mixed methods approaches* (3rd ed). Thousand Oaks, California: SAGE Publications.

Davies, I.K. & Hartley, J. (1972). *Contributions to an educational technology*. New York, New York: Crane Russak & Company, Inc.

Dewey, J. (1966). *Democracy and education*. New York, NY: Macmillan Publishing Co, Inc.

Ely, D. (2008). Frameworks of educational technology. *British Journal of Educational Technology, 39*(2), 244-250.

Fisher Price Toys. (2012, October) *Fisher Price Website*. Retrieved from http://www.fisher-price.com/en_us/brands/babytoys/products/66016

Greh, D. (1997). New technologies the art classroom. In Gregory, D.C. (Eds.), *New technologies in art education: implications for theory, research and practice* (pp. 13-21). Reston, Virginia: The National Art Education Association.

Heise, D. & Grandgenett, N.F. (1996). Perspectives on the use of internet in art classrooms. *Art Education, 49*(6), 12-18.

History of the Internet. (2012, October). *Wikipedia*. Retrieved from http://en.wikipedia.org/wiki/Internet

History of YouTube. (2010, March). *AA Article Alley*. Retrieved from http://artlaco.articlealley.com/history-of-youtube-1482289.html

Internet usage statistics. (2012, October). *Internet world stats: Usage and population statistics*. Retrieved from http://www.internetworldstats.com/stats.htm

Jones, T., & Cuthrell, K. (2011). YouTube: educational potentials and pitfalls. *Computers in the schools, 28*, 75-85.

Koos, M. & Smith-Shank, D. (1997). The world wide web: Alice meets cyberspace. In Gregory, D.C. (Eds.), *New technologies in art education: implications for theory, research and practice* (pp. 33-40). Reston, Virginia: The National Art Education Association.

Pavlik, J.V. (2008). *Media in the digital age*. New York, NY: Columbia University Press.

Salpeter, J. (2009). Textbook deathwatch: The question it seems is no longer "if?" but "when?" *Technology & Learning, 30*(1), 26-28.

Schwartz, B. (1997). Tapping into instructional television and the video in the service of art education. In Gregory, D.C. (Eds.), *New technologies in art education: implications for theory, research and practice* (pp. 51-59). Reston, Virginia: The National Art Education Association.

Snickars, P. & Vonderau, P. (2009). *The YouTube reader*. Stockholm, Sweden: Mediehistorskt.

Stokrocki, M. (1997). How an art teacher instructed students with discovery-based electronic technology. In Gregory, D.C. (Eds.), *New technologies in art education: implications for theory, research and practice* (pp. 95-103). Reston, Virginia: The National Art Education Association.

Sweeny, R.W. (2009). There's no 'I' in YouTube: social media, networked identity and art education. *International Journal of Education through Art, 5* (2+3).

West, D.M. (2012). *Digital schools: How technology can transform education*. Washington, DC: Brookings Institution Press.

Westera, W. (2012). The eventful genesis of educational media. *Education and Information Technologies, 17*(3), 345-360.

APPENDIX A

DAILY OUTLINE/TEACHER HANDOUTS

Day 1:

The classroom teacher explained clay tools to students. Students were required to take notes on a worksheet handed out to them in class. The classroom teacher also explained information about the clay medium and sculpture techniques. Students were required to take notes on a worksheet handed out in class. These worksheets included:

- Tool names and functions
- Types of clay
- Vocabulary
- Stages of clay
- Clay construction methods
- Joining techniques

Day 2:

The classroom teacher reviews and introduces new vocabulary about ceramics and sculpture. Students are required to fill out a worksheet in class. The worksheet included:

- Definitions of clay
- Basic terms/vocabulary
- Hand building methods
- Clay stages
- Joining techniques

Students also received a homework worksheet that required them to match vocabulary terms with definitions.

Day 3:

The classroom teacher handed out an illustrated worksheet with six steps on how to make a clay rattle. This worksheet was meant to guide students if they forgot what to do during the building process. After the worksheet was handed out, the teacher demonstrated how

to make a clay rattle for the control group (Group A) or played the YouTube videos on how to make a clay rattle for the experimental group (Group B). After teacher-centered demonstration or YouTube video demonstration, the teacher demonstrated how to wedge clay. Once the teacher demonstration was complete, students were required to take a wedging test in order to start their projects. As soon as the students proved that they could wedge clay without having any air bubbles, they were allowed to begin the clay rattle project construction.

Day 4-5:

Students worked on completing construction of clay rattles.

APPENDIX B

OUTLINE OF YOUTUBE VIDEO CONTENT

How to Make a Clay Rattle- Part 1 (http://youtu.be/MBvm8Krq0Bs)

- Prerequisites: General clay vocabulary, general knowledge of clay tools and names, how to wedge clay
- Tools and materials needed
- Overview of project
- Frist steps with clay, how much to use and cut off and save for later
- Wedge clay into ball, reminder of no air bubbles and consequences of air bubbles
- Cut ball in half
- Make two pinch pots, example of thickness
- Make pots in hands, no flat bottoms
- Both pinch pots should be about the same size, walls no thicker than a thumb
- Reminder of thickness and examples/consequences, reminder of clay wetness
- Check to see if pots fit together, end of video 1

How to Make a Clay Rattle- Part 2 (http://youtu.be/PVZpZ5aeSj4)

- Prerequisites: General clay vocabulary, general knowledge of clay tools and names, how to wedge clay, have watched video: *How to Make a Clay Rattle- Part 1*
- Reminder of video 1, overview of project
- First steps with pots that were previously made in video 1
- Reminder of how to store clay and keep it moist
- How to make small clay balls for noise makers with explanation
- Wrap small clay balls in newspaper, reminder of what happens if one uses too much newspaper
- Set newspaper wrapped clay balls aside, fix pinch pots to fit together and smooth flat bottoms
- Generally measure pinch pots by holding them together to make sure they will fit into a ball, reasoning why this is important
- How to slip and score, which tools to use, demonstration of different techniques
- Explanation of why slipping and scoring is very important
- Score then slip both pinch pots on the edge only
- Put newspaper wrapped clay balls in pot
- Demonstration of how to join pinch pots together
- Reminder of why slipping and scoring is important and consequence of not slipping and scoring properly
- Reminder of clay moistness, how to solve dryness, explanation of too wet or too dry
- End of video, two pots art joined together and are now in a sealed ball with newspaper wrapped balls inside

How to Make a Clay Rattle- Part 3 (http://youtu.be/XMVOmLppjx8)

- Prerequisites: General clay vocabulary, general knowledge of clay tools and names, how to wedge clay, have watched video: *How to Make a Clay Rattle- Part 1and Part 2*
- Recap of video 1 and video 2, what one should have at the start of video 3
- Two pinch pots should be joined together, almost permanently, some seam still showing
- Explanation of what this video will demonstrate
- Demonstration of how to make a clay coil using one hand, explanation of use of only one hand, not both
- General measure of coil length to clay ball circumference
- Slip and score coil and ball, then attach coil to the seam of the two pots/ball
- Emphasis of slipping and scoring, tips of how to attach
- How to smooth out coil and join coil and ball together, covering the seam, how to properly smooth/spread clay
- How to use tools to smooth surface and create a round clay ball with no bumps or finger marks
- How to use the extra clay to make details/decorations on the clay ball rattle
- Reminder of how the clay ball should look and what it should/shouldn't have
- Overview of next steps: decision of type of rattle (ex: monster), air holes, feet/way to sit on table, decorations/details
- Discussion of air hole placement, creative placement, size of air holes, how to make air holes
- Demonstration of attaching pieces for decoration/detail, reminder of proper slipping and scoring technique, consequences of not slipping and scoring, and reminder of blending edges of clay joints together
- Demonstration of textures using tools
- Demonstration of how to make air holes, emphasis on importance and consequences of not making them or not properly making them, size, technique and number of holes are discussed
- Discussion of air hole size to newspaper wrapped clay balls inside, don't want clay balls to fall out of air holes
- Visual of finished product with all techniques demonstrated
- Recap of all techniques demonstrated in videos 1-3
- Reminder that videos can be replayed/re-watched at any time for reference
- Visual of project in wet stage and finished dried/fired stage
- Verbal reminder of how the rattle should sit flat on the table and not wobbly, all clay joints are smoothly blended together with example
- Text reminder of assignment requirements: must make rattle noise and have air holes, must have joints/seams blended together, and must sit flat on table, not wobble and have an intentional stance, end of video 3

APPENDIX C

PRE-QUESTIONNAIRE

1. Have you ever worked with clay or made anything out of clay before this week? If yes, explain.

2. Have you ever taken an art class before?
    a. *If yes*, how many years?

    b. *If yes*, what kind of art class or what mediums did you use?

3. Have you ever watched a YouTube video(s) before?
    a. *If yes*, what kind of videos have you seen?

    b. *If yes*, how often do you watch YouTube videos?

APPENDIX D

TECHNICAL ABILITY TASK

Materials: Clay, clay tools, water bucket, water, a desk/table, newspaper, plastic, board for rattle sculpture

Directions: You will each receive a chunk of clay and clay tools. Using clay construction techniques previously demonstrated, construct a clay rattle sculpture. Make sure that the rattle includes joints (two pieces of clay that are joined together), has a free standing ability and is stable (doesn't wobble), each loose ball of clay for rattle noise is wrapped in newspaper within the rattle, and that the rattle sculpture has an appropriate size air hole(s) so that it will not explode in the kiln. You will have four forty-eight minute class sessions to complete your clay rattle sculpture.

APPENDIX E

SCORING GUIDE

Directions: Look at the clay rattle sculptures, one student at a time. Each sculpture is labeled with the correct student number. Using the *Scoring Guide,* score each student rattle sculpture and horizontally fill in your score on this *Scorers' Spreadsheet* in the labeled category column. When you have filled out the three categories for each student, please total the three numbers and fill in the *Total Score* column located on the right side.

Category	0	1	2	3	4
Joints (two pieces of clay attached together)	No sculpture has been made.	No joints have been made.	Attempted to attach a joint(s) but did not slip or score clay, joints and seams are visible.	Joints were made but some parts of the seam or slip/scoring are visible.	Joints were made using slipping and scoring, no seams are visible.
Category	0	1	2	3	4
Free Standing/ Stability	No rattle sculpture has been made.	Rattle sculpture is not free standing, has to lean on another object or lie on its side. Sculpture may be wobbly.	Rattle sculpture may be free standing but unstable. Sculpture is wobbly and does not sit/lie flat, could fall over at any moment.	Rattle sculpture is completely free standing and stable, but may not sit/lie completely flat or may wobble.	Rattle sculpture is completely free standing and stable. Sculpture sits/lies flat and does not wobble.
Category	0	1	2	3	4
Surface Quality/ Texture	No rattle sculpture has been made.	Rattle sculpture does not have an intentional texture *(smooth, bumpy, carved, etc.)* on the entire surface. Many finger marks, dents and unintentional textures are visible on entire surface. Surface texture is incomplete and inconsistent.	Rattle sculpture has some intentional texture *(smooth, bumpy, carved, etc.)* on parts of the surface, but unintentional finger marks, dents, or textures are visible on 2/3 or more of the surface. Surface texture may look intentional in some parts but majority of surface is incomplete and inconsistent.	Rattle sculpture has intentional texture *(smooth, bumpy, carved, etc.)* on 2/3 or more of surface. Some unintentional finger marks, dents, or textures are visible *(1/3 or less of surface.* Surface texture looks intentional but may not be 100% complete.	Rattle sculpture has intentional texture *(smooth, bumpy, carved, etc.)* on entire surface. No unintentional finger marks, dents, or textures are visible. Surface texture looks intentional and complete.

APPENDIX F

SCORERS' SPREADSHEET

Name of Scorer: _____

	Category Joints	*Category* Free Standing/ Stability	*Category* *Surface Quality/ Texture*	*Total Score:*
Student 1:				
Student 2:				
Student 3:				
Student 4:				
Student 5:				
Student 6				
Student 7:				
Student 8:				
Student 9:				
Student 10:				
Student 11:				
Student 12:				
Student 13:				
Student 14:				
Student 15:				
Student 16:				
Student 17:				
Student 18:				
Student 19:				
Student 20:				
Student 21:				
Student 22:				
Student 23:				
Student 24:				
Student 25:				
Student 26:				
Student 27:				
Student 28:				
Student 29:				
Student 30:				
Student 31:				
Student 32:				
Student 33:				
Student 34:				
Student 35:				
Student 36				
Student 37:				
Student 38:				
Student 39:				
Student 40:				
Student 41:				

Student 42:				
Student 43:				
Student 44:				
Student 45:				
Student 46:				
Student 47:				
Student 48:				
Student 49:				
Student 50:				
Student 51:				
Student 52:				
Student 53:				
Student 54:				
Student 55:				
Student 56:				
Student 57:				
Student 58:				
Student 59:				
Student 60:				
Student 61:				
Student 62:				
Student 63:				
Student 64:				
Student 65:				
Student 66:				
Student 67:				
Student 68:				

APPENDIX G

POST-TEST QUESTIONNAIRE

1. Have you ever watched a YouTube Video(s) before?
    a. *If yes*, what kind of videos have you seen?

    b. *If yes*, how often do you watch YouTube videos?

    c. *If yes*, do you like to watch YouTube Videos? Why or why not?

2. Explain how the YouTube video "*how to make a clay rattle*" was interesting or non-interesting to you and why.

3. If you had the choice of a YouTube video or regular demonstration/instruction that your art teacher usually gives you for projects which would you choose and why?

4. How did the YouTube video "*how to make a clay rattle*" help you to understand what you were going to make? If it didn't help, explain why.

5. Would you prefer your teacher to use more YouTube videos for instruction? Why or why not?

APPENDIX H

IRB EXEMPT STATUS GRANTED

ASU Knowledge Enterprise Development

Office of Research Integrity and Assurance

To:	Mary Erickson ART
From:	Mark Roosa, Chair Soc Beh IRB
Date:	01/02/2013
Committee Action:	**Exemption Granted**
IRB Action Date:	01/02/2013
IRB Protocol #:	1212008629
Study Title:	Thesis Research, YouTube Instruction

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(1) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

APPENDIX I

PRINCIPAL LETTER OF PERMISSION

Home of the Falcons

Fremont Junior High School
1001 N Power Rd
Mesa, Arizona 85205
(480) 472-8300

Arizona State University
Office of research Integrity and Assurance
660 S. Mill Avenue Suite 315
Arizona State University
Tempe, AZ 85287-6111

December 13, 2012

Human Subjects Review Board:

Fremont Junior High School will provide Allison Lee with student work resulting from a ceramic project for her thesis study, YouTube Instruction. The project is a normal part of the art curriculum. I understand that all identifiers will be removed from the data.

Sincerely,

Principal Patricia Christie

cc. Allison Lee

APPENDIX J

STUDENT RECRUITMENT SCRIPT

I am a graduate student under the direction of Professor Mary Erickson in the School of Art at Arizona State University. I am conducting a research study to compare instructional methods utilizing the video tool YouTube.

I am recruiting individuals to participate in this art project with video or regular teacher instruction/demonstration which will take approximately one week.

Your participation in this study is voluntary, all identifiers are removed, and it is okay to withdraw. If you have any questions concerning the research study, please contact me at: Allison Lee, *aklee9@asu.edu* or Mary Erickson, *m.erickson@asu.edu*.

APPENDIX K

FINAL STUDENT PROJECTS


1
1
2
2
3
3
4
4
5
5
6
6
7
7
8
8


9
9
10
10
11
11
12
12
13
13
14
14
15
15
16
16


17
17
18
18
19
19
20
20
21
21
22
22
23
23
24
24


25
25
26
26
27
27
28
28
29
29
30
30
31
31
32
32


33
33
34
34
35
35
36
36
37
37
38
38
39
39
40
40


41
41
42
42
43
43
44
44
45
45
46
46
47
47
48
48


49

49


50


50


51


51


52


52


53


53


54


54


55


55