A Basic Qualitative Research Study Using a Constructivist Lens: Using Technologies to Infuse the Art Museum Into a High School Visual Arts Curriculum

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A Basic Qualitative Research Study Using a Constructivist Lens:
Using Technologies to Infuse the Art Museum
Into a High School Visual Arts Curriculum

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Abstract

While attending a district professional development seminar, I became shockingly aware of the lack of technology teachers were using in their classrooms. I decided to set up virtual visits to museums to allow high school students to look at and talk about art as if they were on a field trip. As an art teacher, I am faced with a limited budget to support my art curriculum, and field trips have never really been an option. Art museums have proven to be a valuable resource for art education curriculum. I started to research literature to find studies in which others have used technologies to bring the benefits of the art museum into the art classroom. In this qualitative research study, I used methods of observation of my own art room, student questionnaire, interview, and document analysis. The data showed that students appreciated the accessibility of artwork, reacted positively to museum-like discussions, and paid attention to the use of various technologies, even though they often worked inconsistently. Surprisingly, I found that some students preferred creating artwork rather than looking at and discussing artwork using new technologies. Overall, most students gained enjoyment and value when virtually visiting art museums.
Chapter 1: Introduction

Background Narrative

Professional development days are held to improve the teacher’s quality of instruction and knowledge of the field. Professional development is an opportunity for teachers to advance their professional skills and stay current in the educational field. I assumed, as a teacher, that learning would be both welcomed and encouraged during a professional development day by all of my colleagues. As an audience member during a presentation on the 21st century learner, I was proven wrong. During the course of the presentation, as the speaker expounded on the many uses of technology in the classroom, resistance from fellow teachers increased. The room appeared to be divided into two extremes: the teachers already using current technologies in the classroom and the teachers hearing the many technology tools that are available for the first time. To some of the teachers in the room, this information was review. To the majority of the teachers in the room, however, this information was disregarded and labeled as unrealistic to use in the classroom. How astonishing to observe the reactions of the teachers as they protested incorporating technology into the classroom. The point the speaker was making was that our students are evolving with new technology and becoming different learners. As teachers, our responsibility is to evolve with our students so we can still teach on their level. The resistant responses made me ponder the number of art teachers who are successful at using technology in the art room.

I consider myself to be a teacher who admires the advances of new technologies; I am fully aware of the benefits of using these technologies to reach my students in the classroom. I teach in a small school and have limited funds available to support art
lessons. I use technology and free tools available on the Internet to make up for the lack of money available to the art room. Noticing the benefits that technology has already brought to my classroom, I became interested in the pros and cons of using technologies to solve the issue of lack of field trips to art museums.

Art museums provide access to hundreds of works of art; they house many of the artifacts and contemporary artworks that art educators teach to their students. However, for various reasons, not every school is able to take a trip to an art museum. For one, an art museum may not be located close enough for travel within one school day. In addition, funding is needed for transportation, museum admission, and lunch. Angela Eckhoff, researcher, author, and assistant professor of early childhood education at Clemson University in South Carolina, states, “While each community is unique in the cultural resources it can offer to its student population, the geographic restrictions and monetary costs associated with school supported travel in rural settings can be prohibiting factors to museum and gallery access” (p. 258). In addition, with the rigorous demands of New York State testing, a class trip to an art museum is not always viewed as beneficial toward test preparation. For students to miss an entire day of school puts the classroom teacher behind in his or her schedule. Therefore, scheduling a field trip is difficult, especially for art classes, which may not be viewed to be as significant as Math and English. If just one of these components is missing, a field trip to the art museum is unattainable. When physically traveling to an art museum is not a possibility, the advancements of technology could bring aspects of the museum to the art classroom without disrupting students’ daily schedules.
The advancements in technology have taken us from the invention of the computer to wireless devices that are vehicles for accessing information nearly anywhere. Technology opens up new means for teaching students. As technologies develop, the possibility to apply them to education expands. For instance, in general education classrooms, students are using computers to turn in homework, Smart Boards to solve math problems, and iPads to read textbooks. Seeing this made me wonder: With so many technologies available, how can art teachers utilize technologies to bring the benefits of the art museum into the art room?

I have firsthand experience of the educational value that museum visits can have on art education. I taught a summer camp course in a private school in Western NY that focused on art museums. During the class, students and I traveled to a local art gallery. During the visits to the gallery, I observed the emotional reactions of students and their interest in the artwork I was explaining. Students were extremely excited to travel to the art museum and see what was inside. The class ran for one hour a day for five days. On the first day, we planned for the trip and students looked at reproductions of the artwork that they would see the following day at the art gallery. I could only provide students with a small image from a brochure of some of the artwork we would be viewing. I did not have access to all of the artwork and surely not to actual size. When I asked the students for their initial reaction to the image of the artwork, I had difficulty getting a response. It became apparent that seeing the artwork in a small brochure did not do the work justice. In contrast, once inside the museum, students became engaged with the artwork as they interacted and participated in the tour by asking questions, responding to questions, and really looking at the artwork on the gallery walls. The students were far
more enthusiastic about seeing the artwork in the museums than the images from the brochure. According to Eckhoff’s (2011) study on visual arts outreach partnerships:

Learning to explore the details and nuances of work so far through art-viewing opportunities encourages students to see the big picture—to relate their work to the larger art world. In this sense, art museums and galleries can play an integral role in fostering the educational experiences of children through access to visual artworks from a variety of genres and media. (p. 257)

As Eckhoff has noted, there is an observed significance in viewing artwork.

Museums provide educational benefits for students and teachers (Burnham & Kai-Kee, 2011; Matthewson-Mitchell, 2008). However, lack of funds and support for art education, which is the case in my own classroom, make it difficult for teachers and students to visit the art museum. Technologies could provide the vehicle for bringing the art museum to the art classroom. According to Craig Roland (2010), Associate Professor of Art Education at the University of Florida, Gainesville, in just 10 years, Internet usage by teens has drastically increased as has the number of schools with Internet access. If education is to keep up with the technologies that change the way students learn, research is needed to navigate how implementing technologies allow the art teacher to infuse all that the art museum has to offer into the classroom. While art museums have proven to be a valuable resource for art education curriculum, the problem remains of how to better use technologies to secure the benefits of art museums in the art classroom. My research will address this problem.
Statement of the Research Problem

Many factors need to be in place in order to provide students a successful field trip. For the school’s art teacher, these demands are more difficult. As noted above, an art field trip means pulling students from all of their other classes, acquiring administrative and financial support, and traveling. With that said, not all schools are located near a gallery space. A direct substitute for the art museum is not in place when art teachers are not able to overcome obstacles of getting his or her students to the museum.

Art museums supply several educational benefits and are crucial in the visual art curriculum. As stated by Rika Burnham, the head of education at The Frick Collection in New York City, and Elliott Kai-Kee, Education Specialist at the J. Paul Getty Museum in Los Angeles, and authors of *Teaching in the Art Museum* (2011):

Museums are places of possibility. But possibilities are only made real when educators skillfully use the broad knowledge and understanding they have of objects throughout their museums to inspire and encourage people to dream a little with them, and make the artworks their own. (p. 17)

The museum educator’s role in the museum is to make the artwork resonate within the visitor. According to Burnham and Kai-Kee (2011), the museum educator’s goal is to “extend the dialogue” for the visitors (p. 13). The museum educator does not lecture the participants but instead allows the visitors to direct the conversation with their own thoughts. As said by Burnham and Kai-Kee (2011), the museum instructor uses his or her knowledge about artwork to “suggest possibilities, not to establish conclusive interpretations that she will impose upon her students” (p. 12-13). The foundational
teaching techniques of the museum educator could be very useful in the art classroom setting. In addition, if works of art found in art museums are crucial to art curriculum, then a solution is needed to bring the two together.

Current research in museum education does not adequately explain how to entwine the art museum with the art classroom, especially when field trips are difficult to take. I have not been able to locate specific research that addresses how technologies have been used to bring the museum into the art classroom. Research studies exist on small-scale programs initiated in remote locations; however, I found very little research that gives art teachers the tools to bring the art museum into the art classroom successfully and on their own. For example, Angela Eckhoff’s study (2011) did successfully provide artwork and museum education for art students within their own classrooms. However, the study only reached 31 art teachers in one concentrated location in the United States (Eckhoff, 2011). In addition, the outreach program and the people working within it gathered artwork, brought it to the school, and taught the lessons (Eckhoff, 2011). Once the program ended, the art teachers were at the same point before the program began. Another attempt of connecting the art museum to the art classroom was Bettina Carbonell’s grant proposal to have her own audio tours available for her students in some of the New York City’s museums (2011). Again, this only reached students who attended a particular New York City college and were enrolled in a course taught by Carbonell (2011).

During my research, I was able to locate a researcher who wrote about bringing the art museum to the classroom, Kris Wetterlund (2008), a museum educator at the Minneapolis Institute of Arts and Director of Education at the Minnesota Museum of
American Art. Wetterlund’s article, although titled, “Flipping the Field Trip: Bringing the Art Museum to the Classroom,” is not a source abundant with examples of how to bring the museum to the classroom. The research provides a look at the growth of museums after the invention of the Internet. Before the World Wide Web, museum collections were available if you traveled to the museum and now entire collections are available on the Internet (Wetterlund, p. 111). The article continues to examine various online tools that provide educational materials for educators, but are not literal examples of bringing the art museum to the classroom. In addition, the article was written in 2008 and with the fast-paced growth of technology, the information is already outdated as it fails to acknowledge all of the technologies available over the past five years. A lack in current research exists on how to infuse the benefits of the art museum into the daily routine of the visual arts classroom curriculum.

One solution to replacing art museum field trips within a curriculum is to infuse technologies into the classroom, and to allow the technologies to be the vehicle that brings the art museum into the art classroom. Joanna Black, Associate Professor of Art Education in the Faculty of Education and Associate Professor in the School of Art at the University of Manitoba, and Kathy Browning, Assistant Professor of Visual Arts, School of Education, Laurentian University (2011) noted that technology has the capability of stimulating students’ learning and allows students to express themselves. Technology has become an integrated part of student’s lives. In my own school, I see students on their cell phones, using their iPods and tablets, and discussing the latest updates on Facebook and Twitter. It is apparent that students are comfortable using a variety of technologies. Students are comfortable not only using various technologies, but also are
expected to be able to use technologies in many aspects of their lives in and out of school. Outside of school, I know my students are using social media such as Twitter to stay connected with their friends and families. In school, my students are using Schoology to stay connected with their courses—posting project ideas, joining discussion boards, and downloading assignments. Schoology is essentially Facebook for school without the capabilities of students contacting one another. Students can access handouts, homework assignments, and contact his or her teacher through Schoology. Since technology is so integrated into students’ daily routines, teaching art education through technology may connect the students to the learning in an enticing way.

If technology plays such a strong role in students’ lives, then there is no reason why teachers should not be accessing and actively using technologies in the classroom setting. My job as a teacher is to help my students grow and give them the necessary tools to be successful in life. I realize the need to incorporate technologies into my classroom and educate my students to the best of my ability regarding these technologies so they can be successful in and outside of school. Remaining focused on the needs of the student is parallel to the thinking of Constructivist education. John Dewey (1900/1990) American philosopher, psychologist, and educational reformer found:

The present standpoint of the child and the facts and truths of studies define instruction. It is continuous reconstruction, moving from the child’s present experience out into that represented by the organized bodies of truth that we call studies. (p. 189)

Learning is like stepping-stones. As students solve one problem at their level of experience, they are able to move onto the next. Their knowledge is a reconstruction a
notch higher than it was previously as they work toward understanding. As time passed, Dewey’s educational philosophy became what is known today as Constructivism. Constructivist theory supports maintaining a student-centered education (Brooks & Brooks, 1999; Dewey, 1900/1990). Therefore, constructivism can support the use of technologies to be incorporated into the art classroom. As stated by Craig Roland (2010), “Given that digital tools and online participatory media provide a direct link to non-school culture, incorporating these technologies to our pedagogy and curricula increases the relevance of the learning experiences we offer to our students” (p. 23). Technology could be used as means to get students’ attention. If it is true that students use technologies in their personal lives, then teachers could personalize a student’s education by using those same technological tools. Roland, in line with Constructivist theory, states the importance of relevancy for students in their education. If technology is relevant to students’ lives, then following a Constructivist curriculum would support the use of technology in education. With that said, because technology can contribute to creating a curriculum that is relevant for the student, the use of technology also establishes a Constructivist, student-centered education.

In a 2003 national campaign, Speak Up Day, more than 210,000 students responded to a survey on using technology in their school (NetDay, 2004). The survey concluded that, “Students are not just using technology differently today, but are approaching their lives and their daily activities differently because of technology” (NetDay, 2004). With the benefits of technologies as well as the significant role it plays in students’ lives, technologies play an even greater role than perhaps many teachers realize.
In conclusion, a perfect art curriculum would allow the teacher and students to travel to an art museum without limitations as they provide many benefits for the teacher, students, and the curriculum. However, for many art classrooms, art museums are out of reach. Further research is needed to understand how teachers can solve the problem of bringing the art museum into the art classroom. As previously mentioned, with the capabilities of technologies and the significant role technologies play in students’ lives, technology is a possible vehicle to bring the art museum to the art classroom. In addition, using technology in the classroom is supported by a constructivist model: If technology is increasingly apparent in the students’ lives, then technology needs to be present in the constructivist classroom. My research will aid in closing the knowledge gap for how to use technologies to bring the resources and benefits of the art museum into the art classroom. Closing this gap could provide essential tools for teachers interested in bringing the art museum to their students in a meaningful, interactive way.

**Significance of the Study**

My research attempts to infuse technologies into the art classroom to increase access to the art museums through virtual visits. This study is significant because art teachers will have knowledge of tools and methods for infusing the art museum into their own art classroom. If an actual trip to the art museum is unattainable, the teacher and students will be able to virtually reach the museum. Distance to the museum and funding would no longer be issues if technologies can help the art teacher implement the museum’s resources into the classroom. Teachers and students would be able to visit the art museum without scheduling a visit, spending money, or leaving their classroom.
In addition, the study will provide teachers with more ways to use technologies in their classroom. As previously mentioned, using technologies in the classroom is educationally beneficial. Roland (2010) states, “Classroom applications of technology and curriculum goals are inextricably intertwined. New technology should not be used simply because it is available, but because it can build a richer classroom environment in which the teacher and students pursue worthwhile curriculum goals” (p. 19).

Lastly, the study will provide a relevant curriculum for students. Students become engaged in learning when the information presented to them is relevant to their own lives. As stated by John Dewey (1900/1990), “Somehow and somewhere motive must be appealed to, connection must be established between the mind and its material” (p. 205). Using technologies that students use everyday outside of the classroom, but now in the art room brings relevancy to the curriculum. Showing students’ contemporary artwork hanging in art museums also brings relevancy to the curriculum and leads to the purpose of this study.

**Purpose of the Study**

The purpose of this study was to examine how implementing a variety of technologies might allow the art teacher to infuse aspects of the art museum into the classroom. I wanted to explore how I could manipulate various technologies in order to allow my students to virtually visit the art museum on a daily basis from our own classroom. In researching technological tools currently available, I worked to discover how those technologies might open possibilities in the art room.

I hoped to accomplish in this study new and inventive ways to bring the art museum and the art classroom together. I experimented with various technologies to
allow students to gain the experience with technology that has become necessary in education. As stated by Kathy Browning (2011), “All areas of the modern teaching curriculum, including visual arts, have an increasing demand to integrate digital technologies” (p. 21). The purpose of this study was to find out what happens when the art teacher introduces a variety of technologies and enhances the art curriculum by providing students with beneficial resources from the art museum within the comfort of their own classroom.

**Research Questions**

Research questions for this study include:

- How might the art teacher make greater use of technologies to infuse the resources of art museums into the art classroom?
- How might museum education methods translate into the art classroom and the art curriculum using technologies?
- What changes in curriculum result from implementing the virtual art museum into the art classroom?
- How will students respond to the use of technology in the art classroom?
- How can bringing the virtual art museum into the classroom benefit the students and teacher?

**Definition of Terms**

- Constructivist Theory: According to Brooks and Brooks (1999), there are five principals of constructivist classrooms: “teachers seek and value their students’ points of view, classroom activities challenge students’ suppositions, teachers pose problems of emerging relevance, teachers build lessons around primary
concepts and ‘big’ ideas, and teachers assess student learning in the context of daily teaching” (p. ix-x).

- Technologies: Technologies include all tools and machines created to enhance communication and education including computers, smart phones, tablets, active learning boards, the Internet, computer applications, and video, all of which are currently used to varying degrees by art teachers and students.

- Virtual: Describes something that is done on a computer or simulated using a computer. For example, a virtual trip to an art museum refers to going to the art museum on a computer and not physically traveling to the museum.

Limitations of the Study

Limitations to the study include time constraints of completing the study within three courses in a graduate art education program. In addition, the study only examines the use of these technologies with students within one school in Western New York in one classroom with 26 students.

Conclusion

The increase of technologies in our world has developed a need for teachers to infuse those technologies into the classroom (Black & Browning, 2011; Carbonell, 2011; Roland, 2005). In order to stay current, teachers need to maintain their own education and learn from professional development. Teachers adapt technologies to fit classroom needs. In my art classroom, I need technologies to help bring the art museum into the room. Art museums are beneficial as resources for teaching the visual arts, but are difficult for my school budget and for scheduling time for museum visits. Adopting a
variety of technologies will allow me to infuse the resources of the art museum into my art classroom. This study documents this endeavor.
Chapter 2: Review of Literature

My research was grounded in obtaining a complete understanding of the ways to bring the art museum into the classroom by adapting various technologies. To provide background for my study, I researched the use of backward design for planning curriculum and constructivism to lay the foundation of the curriculum. I also thoroughly researched the art museum to know how the benefits of the museum education institution could also be applied to the art classroom. In addition, I completed extensive research on the various technologies available that I could adapt to my art classroom and examples of the need for technologies in the art classroom. One goal of this literature review was to establish several methods to use technologies in order to bring the art museum into the art classroom. Finally, I documented small-scale methods of bringing the art museum into the art classroom. To begin, I relate backward design for curriculum.

Curriculum Design

Authors and educators Grant Wiggins, and Jay McTighe, (2005), focused on backward design, which is to concentrate on the learning teachers want from students and then look at how you will provide that instructionally (p. 14). They note that curriculum is not about the methods educators use, the books we read, or the activities we do. The purpose of designing lessons, units, and curriculum this way is for understanding what and why we do what we do (Wiggins & McTighe, 2005, p. 14). Wiggins & McTighe (2005) write that the backward design process has three stages: “Identify desired results, determine acceptable evidence, and plan learning experiences and instruction” (p. 18). This process aides the teacher in determining what activity would benefit the students the most to learn the desired results (p. 19). As in backward design, I have identified my
desired results, which is to develop a curriculum that is rich with technology use, virtually take the student to the art museum, and expose students to what technology and art museums offer. Knowing my desired results, I worked backwards to design lesson plans that will produce a curriculum that will include students using technology and accessing art museums for interaction with artworks. In addition to backward design, I also researched constructivism in order to improve my curriculum design.

I investigated constructivism in order to provide successful methods in designing a curriculum. One part of using a constructivist framework to design curriculum is that lesson content must hold relevance to students’ lives. Another is that teachers must be able to ask pointed questions that help students think about content. What I discovered was the importance of incorporating relevancy in education and posing questions to students that comprised a strong curriculum. As stated by authors Jacqueline Grennon Brooks, Associate Professor in the Center for Science, Mathematics and Technology Education at the State University of New York at Stony Brook, and Martin G. Brooks (1999), Superintendent of the Valley Stream central High School District in Valley Stream, New York, in constructivist theory, the way the teacher poses questions is essential to student learning. When a teacher asks a question, he or she is asking the students to rethink prior knowledge. According to Brooks and Brooks (1999), “The structuring of the lesson around questions that challenge students’ original hypotheses presents students with the initial sparks that kindle their interest” (p. 37). A teacher posing thoughtful questions has the ability to engage the students. John Dewey (1900/1990) also acknowledges the importance of gaining student interest:
How they [the students] operate will depend almost entirely upon the stimuli which surround them and the material upon which they exercise themselves. The problem of direction is thus the problem of selecting appropriate stimuli for instincts and impulses which it is desired to employ in the gaining of new experience. (p. 197)

In order for students to learn, teachers need to establish a stimulating problem for students to solve, which in return should secure the students’ attention. Based upon Dewey’s statement, if I want my students to learn, I need to both capture and maintain their attention. As mentioned previously, technology is already interwoven into my students’ lives. As I use technologies in bringing aspects of the art museum into my classroom, the technology tools may better engage my students in the learning.

An additional characteristic of constructivism is that education is child-centered and provides relevant information to make the curriculum about the students’ needs and interests (Brooks and Brooks, 1999). In addition, Dewey’s (1900/1990) writings support a student-centered education as he says that learning starts from what the child already knows and new knowledge expands on their previous knowledge. For this study, I see technology as the relevant factor in each of my students’ lives. All of my students are absorbed in their cell phones or iPods, so I will incorporate these technologies, among others, to motivate and maintain student interest into the art curriculum content. A motivated experience that centers on the museum visitor is also a characteristic that museum educators seek.
The Role of the Art Museum in the Curriculum

The responsibilities of the museum educator are to provide experience with art objects, engage visitors, inspire visitors to closely look at the artwork, know their audience, and provide accurate historical information—these tools combined allow visitors to have meaningful experiences (Burnham and Kai-Kee, 2011). As stated by Burnham and Kai-Kee (2011), “Museums are places of possibility. But possibilities are only made real when educators skillfully use the broad knowledge and understanding they have of objects throughout their museums to inspire and encourage people to dream a little with them, and make the artworks their own” (p. 17). Adopting the mindset that museum educators possess will aide the art teacher in bringing the art museum into the art classroom. My goal is to recreate the attitude of the museum educator in my art classroom.

In addition, many factors contribute to the experience of the visitor. As concluded by Burnham and Kai-Kee (2011), “The best gallery teaching requires flexibility and the ability to balance the desire to share our own hard-won understandings against an openness to interpretations that come from completely new places” (p. 18). If I want to create the experience of the art museum in the art classroom, I need to remain flexible and be able to ask questions that lead to plausible interpretations of the artwork by the students. Promoting student voice and opinion helps to support students’ interpretations of the artwork, in addition to those of critics, the artist, or other experts. Students often have surprisingly valid thoughts and opinions when teachers listen and probe responses. To teach like a museum educator is to welcome hearing students’ interpretations when viewing artwork and help them build on those ideas. The art teacher
in the classroom can use the same techniques the museum educator employs in the museum.

There are similarities and differences in the curriculum of the art museum and that of the art classroom (Vallance, 2006). As stated by Vallance, “Museum education programs are created more through a general sense of both what content should be covered (what parts of the collection, which exhibitions) and for which audience (children, families, teachers, etc.) than through a systematic analysis of curriculum models” (p. 134). Unlike classrooms, with standards and regulations forced upon them by state and federal government regulations, the museum has the freedom to choose the educational structure and the capability to be flexible to meet the visitors’ needs (Vallance, 2006). In order to bring the art museum into the art classroom, I need to adapt the mindset of the museum educator and feel free to structure my art classroom and its curriculum around my students’ needs. I intend to model much of my curriculum and teaching strategies after those of the museum educator in order to study how this modification might work in my classroom.

**Teaching Strategies of the Museum Educator to use in the Art Classroom**

Museum educators employ instructional strategies that art teachers could transfer into the art classroom. Authors Burnham & Kai-Kee (2011) state that one of the instructional strategies museum educators practice is a conscious attention on the use of questioning in the education process (p. 94). A single artwork can have multiple interpretations (Burnham & Kai-Kee, 2011, p. 94). When we are given information about a work of art, it actually has the power to change the way we look at it (Burnham & Kai-Kee, 2011, p. 95). Teachers need to be careful of what information they choose to
share with students and when they share that information. This also applies to questions. Teachers need to be aware of what questions they ask, how they ask them, and when they ask them. In a museum visitors should be able to choose their own path of exploration and learning (Burnham & Kai-Kee, 2011, p. 95). By asking too many questions, the museum educator limits the visitors’ self-exploration (Burnham & Kai-Kee, 2011, p. 95). Museum educators want to use questions successfully. The authors feel that when this is done, the skills learned in the museum can carry over to the classroom (Burnham & Kai-Kee, 2011, p. 101).

Therefore, the authors propose that learning and discussing artwork in a museum should present like a dialogue (Burnham & Kai-Kee, 2011, p. 105). To quote Burnham & Kai-Kee (2011), “We propose that we stop asking our visitors questions and return to the artworks not through lecturing, but through engaging our visitors in dialogues about and with the art. Dialogue can be rich, even without questions” (p. 105). To paraphrase Burnham & Kai-Kee (2011) in the following section, the two authors explain the dialogue process as the following: the museum educator begins the dialogue by asking the visitors to view and observe the artwork without discussion. Then the museum educator can ask visitors to discuss what they see. As the visitors discuss their observations, the museum educator intently listens. When a visitor makes a comment that is correct, the museum educator can support the statement by confirming it with additional information on that subject at the appropriate time. After the museum educator states a fact, the visitors continue the dialogue. In this way, all of the visitors are working together to bring out the information and history of the artwork. The authors favor this
form of museum dialogue because the visitors contribute together to shape their own experiences and do the question-asking. As stated by Burnham & Kai-Kee (2011):

We allow questions to arise out of the encounter with the artwork, and when they do arise, they provide direction as we search for meaning together. Questions generate answers and ideas, which generate more questions. In this exchange among teacher, visitor, and artwork, the artworks come alive to their viewers. (p. 109)

Recreating this instructional strategy within the art classroom may be beneficial for the teacher, students, and the curriculum. In addition, it also follows the parameters of creating a constructivist classroom as a museum educator uses questions to challenge knowledge as well as keep the conversation relevant. I intend to follow the above strategy for viewing and discussing artwork in my own classroom, as if the students were in a museum. I want to hear more from my students about what they see as they work through unraveling the message or the story behind a work of art. What is missing is a tool to bring the art museum to the art classroom.

**Demonstrating the Needs and Purposes for Technology in Art Education**

Significant research is available on the need for technology in the art room. Technology is an effective means to communicate educational material to students (Black & Browning, 2011; Chung, 2007; Roland, 2010). Author Sheng Kuan Chung (2007), Assistant Professor and Graduate Program Director of Art Education in the Department of Curriculum and Instruction at the University of Houston, states that, “advances in computer technology dramatically transform modern society into an arena where digital devices are indispensable” (p. 17). Chung (2007) continues, “In the age of computer
technology, many American K-12 schools have ample funds for maintaining a computer lab but not for obtaining art supplies” (p. 22). In my school, there is not an abundance of money for art supplies and I conduct my classes on the essentials and no luxuries. However, there is an ample amount of money for technologies. In fact, my school receives an annual grant specifically for technology. With this said, taking advantage of the technology in my school is a way to supplement the lack of art supplies. What I cannot do with art-specific supplies, I can make up with technologies. I can manipulate the technology available to teach the content of my curriculum. Finding whether this idea will work is a part of my research effort.

In addition, Black & Browning (2011) conclude that the lack of technology in education is detrimental for our students and they are not prepared for our technological world when they complete school (p. 20). Technology has the capabilities of stimulating students’ learning and allows students to express themselves (Black & Browning, 2011, p. 24). For example, when using a photo-editing program, students are making the decisions on how to alter an image, and the possibilities are endless. Instead of the teacher requiring a specific medium, paint for example, the students choose the medium and how to use it. With photo-editing software, students can choose from things like paint, text, and filters to create their artwork. Choice allows the students an opportunity to personalize their artwork. The art teacher can use technology in the classroom to enhance curriculum (Dunn, 1996; Roland, 2010). According to Craig Roland (2010), “Classroom applications of technology and curriculum goals are inextricably intertwined. New technology should not be used simply because it is available, but because it can
build a richer classroom environment in which the teacher and students pursue worthwhile curriculum goals” (p. 19). As stated by Dunn (1996):

The visual and technical problem solving that occurs when art students use contemporary technology to produce visual images, download works from the “real world of art,” access information about these art works, engage in critical analyses and discussions of art works, and compare and contrast the aesthetics of a wide variety of cultures can prepare them to meet the challenges of the 21st century like no other subject in our schools. (pp. 8-9)

Technology woven into an art curriculum can enhance student learning and better prepare them for a future with technology. As stated by Dunn (1996), “Technology is already significantly affecting education and is destined to become an even more integral part of our personal and professional lives in the future” (p. 10). In order to meet the needs of our students and to prepare students for the future, technologies needs to be a component of the art curriculum. Technologies are a necessity, spark creativity, and assist the teacher in reaching curriculum goals. With the needs and purposes of technology in art education justified, I now turn to methods that I will use to adapt technology into the art classroom.

**Infusing the Art Museum into the Art Classroom Using Technology**

As art museums have a lot to offer art education, there is some emerging research on bringing the art museum and the art classroom together. According to Kris Wetterlund (2008), before art museums began putting their collections online, images of art for classroom use were only available in slide format, poster images, or small images in art history textbooks (p. 111). After art museums put their collections online, teachers
had access to hundreds of artworks readily available (Wetterlund, 2008, p. 111). The online collections also gave access to hundreds of works of art that are not on display in the museum and put in storage (Wetterlund, 2008, p. 111). As stated by Wetterlund (2008):

Digitalized images of art museum collections online function like a doorway for teachers and students from classrooms directly into art museums. Teachers and students can use museum Web sites to see works of art exhibited at the museums, and they can also see works of art that may be in storage at the museums, not on view to the visiting public. (p. 114)

Art museum websites give teachers and students access to thousands of artworks. The teacher and students can access the website of an art museum to see their artwork instead of traveling to the site. Art museum websites are one way to infuse the art museum into the art classroom.

Authors Kathy Unrath, Assistant Professor of Art Education at the University of Missouri and Mick Luehrman (2009), Professor of Art Education at the University of Central Missouri, also acknowledge the importance of the art museum within art curriculum and developed a program to teach their graduate students as well as bring art to K-12 students. Unrath & Luehrman (2009) feel that art museums stimulate curiosity (p. 41). Within the program, graduate students developed portable art museums with suitcases in which each suitcase had a theme to bring the art museum to the art classroom (Unrath & Luehrman, 2009, p. 44). The graduate students carried these suitcases into the classroom as a literal traveling museum. Creating portable art museum suitcases is one way in which these professors have brought the art museum into a few art classrooms in
their area. This more literal concept is one attempt to bring the art museum into the classroom, however is it the most suitable? How does one fit an entire art museum into a suitcase? Today there is no need to lug a suitcase around that could not possibly house all of the hundreds of artifacts that museums offer. With technology, a click of the button gives the students and teachers access to almost endless works of art in an art museum.

Angela Eckhoff, researcher, author, and Assistant Professor of Early Childhood Education at Clemson University in South Carolina, also sees the importance of bringing the art museum to the art classroom and was able to do so on a small-scale for a few art classrooms. To fulfill the need of schools to be able to travel to an art museum, Eckhoff designed an outreach program that could send artwork from local artists in a traveling museum to the teachers that needed to use them in their classroom (Eckhoff, 2011, p. 257). Teachers were able to choose the artwork that traveled to their classroom based on his or her needs (Eckhoff, 2011, p. 260). With one of the artworks, the artist sent carving tools and each student had the opportunity to carve into a clay bowl the artists had previously thrown (Eckhoff, 2011, p. 261). Sharing artists’ tools with students can be used in the art classroom to demonstrate the process of making artwork for the students. As concluded by Eckhoff (2011), “The outreach site visit provided an opportunity for students to see themselves connected to the larger community of artists” (p. 261). Bringing the art museum to the art classroom gives students the chance to see themselves as artists and a part of their community. The program allowed the children to see that artists work in their own community and produce museum-quality work. Showing students artworks from local artists that are of museum standards is one way to bring the art museum into the art classroom.
In order to create a successful curriculum, one needs to know how to adapt technologies that work well in the art classroom. I researched technology tools that I could adapt to fit my needs and that were manageable—that I could successfully use in my art room. I found several technological tools that I could use to meet my goal. One method is by designing a web-based student art gallery.

Hanging student artwork is time-consuming and there never seems to be enough space to display artwork (Burton, 2010, p. 47). According to David Burton (2010), “unlike the space in traditional galleries that may restrict the amount of art that can be shown, a Web-based gallery is virtually limitless, affording many more students an opportunity to display their artwork” (p. 47). A web-based student gallery gives students the opportunity to display their own work and allows the teacher and students to continuously display a multitude of artwork. In addition, an online gallery becomes a way to reach hundreds of viewers and advocate for your school’s art program (Burton, 2010, p. 48). Burton (2010) feels, “Exhibiting student artwork is an important part of a complete artistic experience. It provides opportunities for other people—teachers, classmates, lower and upperclass students, school staff, and other members of the public—to see, appreciate, and praise student artists” (p. 51). In conclusion, Burton (2010) writes, “Web-based student art galleries represent the marriage of art and technology. Art provides the content; the Internet supplies the context” (p. 51).

One of the most accessible tools to bringing the art museum into the art classroom is the use of museum or art-based apps. Thanks to the iTunes stores, teachers as well as students can download dozens of free art-related apps. These apps can be accessed by the teacher and in the classroom to function for educational purposes. For example, the
app, “Art Museum Timeline” gives access to hundreds of works of art in chronological order. Using this app in the classroom visually demonstrates the progression of art throughout history and could be used a teaching tool. In addition, students could download the app and access the same information on their own and outside of school. Free educational tools for teachers and students have the potential to positively contribute to art curriculum.

Google Art Project is an additional free tool that can help bring the art museum into the art classroom. Google Art Project is an online site that houses hundreds of art museums and the artworks they own available for website visitors to view. As described on Google Art Project’s website, “Museums large and small, classic and modern, world-renowned and community-based from over 40 countries have contributed more than 40,000 high-resolution images of works ranging from oil on canvas to sculpture and furniture” (http://www.googleartproject.com). Google Art Project is a strong tool for art teachers to bring the art museum into the art classroom. There is no charge to virtually visit a museum in China and see their collection. Teacher and students can virtually travel to dozens of museums around the world from their own classroom without spending any money. Google Art Project is one of the tools that can be used to adapt the art museum to the art classroom.

In addition to Google Art Project, the technological tool, Skype, can be manipulated to aid bringing the art museum into the classroom. Skype allows users to contact one another through messaging, voice, and video calls. According to Skype’s website:
With Skype, you can share a story, celebrate a birthday, learn a language, hold a meeting, work with colleagues – just about anything you need to do together every day. You can use Skype on whatever works best for you - on your phone or computer or a TV with Skype on it. It is free to start using Skype - to speak; see and instant message other people on Skype for example. (skype.com)

Skype can be used to contact museum educators from my own classroom, and then I can project the Skype connection so every student can participate in the conversation. Using Skype as a platform for communicating with a museum educator, the museum virtually travels to the classroom. In addition, Skype members can contact other Skype members anywhere in the world. The ability to contact anyone across the world opens up the possibilities of contacting and bringing the art museum into the art classroom.

Art museums are recognized valuable sources to art education curriculum. However, there is little research on ways to easily reach the art museum and take advantage of its resources. While creating a portable museum is, as researched by Unrath and Luehrman (2009), one way to bring the museum to the classroom, it is not practical. Angela Eckhoff (2011) designed a program that loaned local artists’ work to local schools; however, the program only reached a few schools. Researching technology tools showed that they could be used to bring the art museum into the classroom. Web-based art galleries, Google Art Project, and Skype are a few of the technologies that will be used in this research study. My curriculum will adapt aspects of the above techniques to aid in bringing the art museum into the art classroom.
Conclusion

In summary, backward design and constructivist theory are foundational to this study. Constructivism forms the foundation for this qualitative study that seeks to build understanding and knowledge through active experience and reflections on that experience. As such, constructivism calls for education to be centered on the students, their needs, and their world. Research shows (Black & Browning, 2011; Brooks & Brooks, 1999; Burnham & Kai-Kee, 2011; Burton, 2010; Chung, 2007; Dewey 1900/1990; Dunn, 1996; Eckhoff, 2011; Roland, 2010; Unrath & Luehrman, 2009; Vallance, 2006; Wetterlund, 2008; Wiggins & McTighe, 2005) that there are many benefits of the art museum as well as a need for technologies within the art classroom. Art museums provide an experience for its visitors and access to hundreds of artworks. However, the techniques researched in the past to bring the art museum to the classroom do not meet the needs for every art educator. The lack of techniques researched with the importance of technology in education, places a demand to explore the ways in which technology could be used to bring the art museum to the classroom. With the development of new technologies, bringing the art museum into the classroom has become not only an easier and more practical accomplishment, but also allows art teachers to create experiences that capture students’ attention and foster a constructivist learning environment. The challenge of forming a constructivist curriculum using Internet technologies specifically related to emulating museum education strategies and techniques formed the foundation for my design of study.
Chapter 3: The Design of the Study

With budget cuts a common happening across the country, art teachers are forced to be creative with their diminishing budgets. As there is an increasing importance placed on technology education, this qualitative research examines how those technologies could bring the art museum into the art classroom. My feeling is that art museums could play a stronger integral role in a visual arts curriculum. Since my schools’ classes do not have a budget for field trips, I hope to find out what happens when I build a curriculum that includes accessing art museums via technology to enhance student learning.

Although research is available on bringing aspects of the museum to the art classroom, the research is either temporarily funded, involves additional staffing, or does not use technologies to bridge the museum and the classroom. By exploring the uses of various technologies, I hope to infuse aspects of the art museum in the art classroom, understand the implications, and see the benefits for teachers and students.

Information Needed

In the previous chapter, I explored research on museum education to justify that access to museums through technological tools could be adapted to use in my art classroom. Constructivism provided the theoretical framework for this study and forms part of the foundation for this research and for executing the art curriculum. This study is to ultimately improve my students’ art education. Research also supports that art museums as well as its museum educators serve as a benefit to art education in schooling (Burnham & Kai-Kee, 2011). Art museums house artifacts and research information about those artifacts that art teachers discuss in their classrooms. In addition, museum
educators have developed programs and methods of teaching to aid visitors in better understanding art. My research will document bringing the tools and methods of the art museum into the art classroom. Lastly, research suggests that there is a need for more technology use in art education (Black & Browning, 2011; Chung, 2007; Roland, 2010). This study seeks to investigate how art teachers might use technological tools to bring aspects of art museums that can enhance a school’s visual art curriculum.

**Methodology of Study**

The methodology of this study is a basic qualitative research study that follows a constructivist orientation. According to Sharon Merriam, professor of adult education at the University of Georgia (2009), “Qualitative researchers conducting a basic qualitative study would be interested in (1) how people interpret their experiences, (2) how they construct their worlds, and (3) what meaning they attribute to their experiences” (p. 23). My inquiries are to gain an understanding of how my students and I develop and respond to changes and innovations in the art curriculum that incorporates the use of technology to access art museums. Through observation, interview, and document analysis, I will obtain the information I need to address my research questions. As concluded by Merriam (2009), “In summary, all qualitative research is interested in how meaning is constructed, how people make sense of their lives and their worlds. The *primary* goal of basic qualitative study is to uncover and interpret these meanings” (p. 24).

**Site of Study**

The site for this study takes place in one school in Western New York in which I am the school’s art teacher for grades nine through twelve. It is located in the suburbs of the second largest city in New York State. The community is predominately middle class
and white with approximately 10,000 people in this suburb. Approximately 350 students are enrolled in this private school. The school is a one-story building constructed of beige bricks nestled among neighboring houses.

The art room is located at one end of a long hallway and is surrounded by the music, dance, and foreign language rooms. Walking down the hallway to my classroom, a visitor will pass a sea of blue lockers before reaching my room. Upon approaching, one will know they are near the art room by the artwork that begins to fill the walls. Entering the classroom, one will notice the amount of items packed into the classroom. I refer to it as my art room of organized chaos where everything has a place. The classroom is abundant with natural lighting with windows on two sides of the room. Six rectangular tables sit in the middle of the 20’ x 50’ room equipped with enough chairs to accommodate all students (See Appendix H for room layout created on American Federation of Teachers website). The wall to the immediate left is consumed with shelving from floor to ceiling. This area is designated for ceramics students to access project supplies and store in-progress projects. Moving clockwise around the room, the next wall is home to more storage cabinets, two sinks, and a paper cutter. Angled in the corner between this wall and the next wall is the teacher’s desk. Behind the desk is a large bulletin board covered with important school information that I need to access on a daily basis. Under the bulletin board, sits more shelving that I have been using to sort paperwork for the various art classes and clubs. Continuing on the wall, more storage shelving with black crates followed by two hand-build wooden wardrobes converted into storage cabinets. Windows cover the last wall with a pull-down project screen between two windows and then two corkboards used for project assignments on opposite sides.
Overall, the room is very suitable to hold art classes and allow for daily function and storage needs. I teach at this site every day and I am familiar with the classroom, faculty, and students, which support the choice of this site and its’ participants for my research.

Participants

Using nonprobability sampling, I chose the participants in this study to be the students in one of my foundational art classes. According to Merriam (2009), nonprobability sampling is to be used when, “the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned” (p. 77). The student participants are enrolled in a foundational art class, which includes ninth through twelfth grade and range in age from fifteen to eighteen years of age. This class is held every day of the week for one school period, which is 39 minutes. There are a total of 26 participants in this study with 19 girls and 7 boys. I chose this class for two reasons. As a foundational art class, there are more opportunities to use technology in the classroom as the students as I cover a variety of topics. This range will allow me to manipulate technologies to meet different needs. In addition, due to the participants’ age, their familiarity with technology will allow me to spend more time teaching the art portion of the lessons and less time teaching how to use basic technology. I should be able to capture more data on the topic by using this class. Participants will interact with technologies as we direct the technological function to virtually viewing art museums.
Role of Researcher

I took the role of participant as observer: “The researcher’s observer activities, which are known to the group, are subordinate to the researcher’s role as a participant” (Merriam, 2009, p. 124). In this research, I will teach the lessons I am designing for the study, record observations, interview participants, and analyze documents. As the teacher of the classroom, my responsibilities lay heavily within the participant role, but the role as the researcher/observer is still present.

Students are aware of the study and have signed a letter of assent giving their permission to participate (see Appendix D). I will record classroom sessions using video taping supplemented by field notes from observations. In addition, participants will complete a simple interview (see Appendix E) and pre and post questionnaire (see Appendix G). As said by Merriam (2009), “Once you (the researcher) become familiar with the setting and begin to see what is there to observe, serious data collection can begin” (p. 123). As the teacher of this site, I will already be familiar with the participants and can begin the study immediately.

Data Collection Methods Used

Once I have obtained the appropriate signed consent from the participants’ guardian (see Appendix C) and the signed assent from the participants (see Appendix D), I can begin to collect data. I will use four methods to collect data in this study: observation, interview, questionnaire, and document analysis. According to Merriam (2009), the process of using at least three data collection methods to insure validity is known as triangulation (p. 216). Merriam, (2009) continues, “Triangulation remains a principal strategy to ensure for validity and reliability” (p. 216). I compared findings
from observations, interviews with students, document analysis of lesson plans, student questionnaires, and discussion pages on Schoology as my three primary methods to collect data. I used observation of students in the classroom to understand how students are responding to the increased use of technology in the art room as well as the increased focus on art museums. I documented the interaction between the student, the technology, and me as the teacher. Merriam (2009) refers to observation stating, “It is important to understand the perspectives of those involved in the phenomenon of interest, to uncover the complexity of human behavior in a contextual framework, and to present a holistic interpretation of what is happening” (p. 214-15). Observation of classroom interaction is one means to help me to understand the responses of the participants to the innovation made in the art curriculum.

Student interviews will also assist in understanding how the participants respond to using technologies and accessing art museums. The template that I followed for the student interview is available in Appendix E. The use of student interview as a form of data collection gave me the opportunity to fill in the information that I was not able to obtain through observation. I was able to hear directly from participants rather than interpreting their behavior. As said by Merriam (2009), interviewing is necessary when we cannot observe behavior, feelings, or how people interpret the world around them” (p. 88).

The third primary data collection is document analysis. I asked students to complete a simple pre and post questionnaire before and after the study (see Appendix G). The questionnaire provides comparable data to uncover the students experience with technologies and art museums as well as the curriculum before and after the study. I also
used products created by the students during the study to assess the level of comprehension. Just as in the normal operations of an art class, student artwork helps the teacher assess whether or not the student understood and applied the information taught by the teacher. In addition, several other documents arose during the course of study. During my study, I collected data through teaching resources such as lesson plans, personal reflections of my own and of students, printouts of Schoology discussions, email conversations, and information on our classroom Instagram account that proved to be valuable data.

In addition to analysis of student artwork, I maintained a document to track the types of technology I used in the classroom. During the process of data collection, I kept a chart of the technologies that tracked when the technology was used, how it was used, who used it, how it brought the art museum into the classroom, reflections on use as the teacher, and responses from students (see Appendix F). This organized my thoughts and kept track of all the technologies I was using and the many ways students and I were using each technology.

Lesson plans are another document that I analyzed. I collected the lesson plans used during the study and ensured they were accurate with the happenings of the classroom. Lesson plans provided a record of the concepts covered, anticipated uses of technologies, references to art museums, and classroom procedures (see Appendix J).

The multiple methods of data collecting are an effort towards viewing an accurate portrayal of the events of the study. During this time of data collecting, it is significant to be aware of potential ethical issues that may occur and plan a policy in order to prevent ethical issues.
Ethical Issues

Ethical issues can sometimes arise when conducting research. Merriam (2009) stated, “The protection of subjects from harm, the right to privacy, the notion of informed consent, and the issue of deception all need to be considered ahead of time” (p. 230). Merriam (2009) continues, “Part of ensuring for the trustworthiness of a study—its credibility—is that the researcher himself or herself is trustworthy in carrying out the study in as ethical a manner as possible” (p. 234). To begin observing and including participants in my research, I needed to submit and receive approval for a proposal to the Institutional Review Board for human participants at the university to protect the rights of the participants. Educational researchers Marshall & Rossman (2006) noted that “questions about how the researcher relates to participants—ethical matters—come under the jurisdiction of institutional review boards (IRBs), which are charged with ensuring the protection of human subjects in all research conducted under the auspices of that institution” (p. 47). I submitted a proposal to the Institutional Review Board with detailed information regarding the purpose of the study, the population, methods and procedures to be used, potential risks and benefits, how confidentiality would be maintained, and copies of the letters to be given to my school’s principal, the participants, and the participants’ guardian. After approval from the IRB, I began research within my classroom. In addition, I successfully completed a CITI ethics online training program that provided an in-depth review of IRB processes, laws, and ethics.

In addition, the participants in this study are under the age of 18 and considered vulnerable subjects. As mentioned earlier, in order to protect the participants, a signed letter of consent was obtained from each participant’s guardian, a signed letter of assent
was obtained from each student, and I also obtained approval from the school’s principal in a letter of consent (see Appendix B). To maintain confidentiality, I also used pseudonyms for all names of participants and the site of study.

To heighten credibility of the study, I felt it was important to maintain a level of reciprocity. According to research methodologist Creswell (2009), “Both the researcher and the participants should benefit from the research” (p. 90). My students will benefit from the study in several ways. The study will expose the participants to an increased time with various technologies and therefore an increased familiarity with the technologies. As documented earlier, familiarity with technology is necessity for today’s student. Many of my students are looking to continue their education at the college level. The goal of my school is to prepare students for college. With this study, I am supporting the school’s mission. Technology is a tool students can use to be successful during a time they are learning to research various topics, present information, and prepare reports. In the following section, I discuss how I will manage and analyze data.

Data Management Plan and Analysis Strategies

According to Merriam (2009), “Collection and analysis should be a simultaneous process in qualitative research. In fact, the timing of analysis and the integration of analysis with other (data collection) tasks distinguish a qualitative design from traditional, positivistic research” (p. 169). As I collect data in my classroom, I will analyze the information. The response of participants to the curriculum innovation will determine future alterations. Using the technologies to bring the art museum into my classroom is a method of trial and error. Some technologies may and some may not be
the best fit for teaching the chosen curriculum concepts, and I anticipate a mixture of responses from students.

I labeled each piece of data with identification information such as, “10/1/2013 Interview with C.S.” and organized and stored a majority of the data using Microsoft Word. For observation notes and participant interviews, I transcribed into Microsoft Word. Each observation and interview has its own Microsoft Word document with a corresponding file name, kept in a folder on my computer, and backed up on my external hard drive. As supported by Merriam (2009), “Each interview, set of field notes, and document needs identifying notations so that you can access them as needed in both the analysis and the write-up of your findings” (p. 173).

Once data is collected, I began to pull out concepts that link, coincide, and form patterns. As Merriam (2009) said, “Findings can be in the form of organized descriptive accounts, themes, or categories that cut across the data or in the form of models and theories that explain the data” (p. 176). These concepts and the data that supports them were sorted, copied, and pasted into their own Microsoft Word file. Each file is named with the concept category. As data collection continues, I updated the concept files with any new and supporting information. As summarized by Merriam (2009), “The task is to compare one unit of information with the next in looking for recurring regularities in the data” (p. 177). Merriam (2009) continues, “These patterns and regularities become the categories or themes into which subsequent items are sorted” (p. 180-81). Original observation notes are kept in a notebook and original participant interviews are kept in a file folder. In addition, all observations and interviews are audio recorded. After an
observation or interview, I had a second opportunity to fill in any gaps in observation field notes.

As for student artwork, each piece was labeled with identification information such as student, grade level, date, and the lesson title. Artwork was documented with a digital camera and files were kept on a password-protected computer. All of the student artwork is kept in a large portfolio or on computer. Students will not have an issue with my holding onto their artwork, as this is the normal procedure for our art room. All artwork is collected and saved throughout the year in order to install the school’s annual art show.

According to Merriam (2009), data is collected until sources are exhausted, categories are saturated, and there is an emergence of regularities (p. 173). I will continue to look for meaning within the data until all sources are exhausted and all categories are saturated.

Conclusion

In conclusion, this basic qualitative research shows how both my students and I responded to changes in our art curriculum with increased use of technology in the art room, as well as the increased focus on art museums. Using triangulation by collecting data through observation, interview, document analysis, and questionnaires, I obtained information to address my research questions. My own art classroom is the site of study and I assumed the role of participant as observer. Following IRB and ethical protocols, I obtained permission from my school’s principal, student participants, and their guardians to protect the rights and privacy of my students. The participants of this study are grades nine through twelve. In addition to receiving the necessary approvals, I completed an
ethics-training course and ensured that my school and participants were benefitting from the study. Once data was collected, I organized the information using Microsoft Word and looked for the concepts that emerged from the data. These reoccurring concepts developed into my findings, which I describe in greater detail in the next chapter.
Chapter 4: Findings

Every morning as I drive to school, the houses and buildings become increasingly separated and trees fill the spaces in between. The city gives way to suburbs. Beyond the railroad tracks, I immediately see the yellow bricks of the single-story school building as it spans across the property. The main lobby, which is the center hub to the entire school, leads to three long hallways filled with college posters, artwork, and club advertisements. Rows of lockers line the west wing of the hall where visitors are immediately aware that this area is home to the art room with it’s’ tables, sinks, storage cabinets and artwork. Artwork spills out the door and down the hallway. This art room is where my ninth period studio students and I collaborated to bring the art museum into our art classroom.

When I first introduced the study to my students, I was unsure of how they would react. High Schools students have a lot going on and are wrestling with issues of identity and belonging. I was not sure if students were going to refuse to participate or give me a difficult time. I was relieved to discover that the students were willing to participate and actually were not worried that I was going to be recording our classes and taking notes on the things they said. Some even immediately signed the assent form and turned it in before the end of class. I just kept stressing to the students, this does not change our class, it does not mean more work for you; and on the plus side, and we get to use more technology. I explained that I normally observe and take mental notes, but as a study for college, I need your permission. I asked students to take their letter home as well as the letter to parents, have them fill it out, and bring it back by Friday. I also posted the letters on Schoology, a site designed for the students in the class to access class handouts and
class discussions, so students and parents have access to the letters if they lose a copy, want an additional copy, or need to refer to it at any point in the semester.

Over the next several weeks, I began to implement lessons to experiment with different technologies. In the lessons, we explored the artwork owned by the museum as well as an overview of how to use the piece of technology that was allowing us to virtually travel to that museum. Reactions from the students were consistent. Some students responded that they enjoyed our open, classroom dialogue; other students wished the project included more hands-on studio time. Some liked the concept of traveling across the world to see a museum, and others liked the technology component. I explore each of these findings further in the sections below.

**Positive Reaction to Museum-Like Discussions**

I introduced the students to Google Art Project and Google Earth. After an overview of Google Art Project, I chose to have the students look at the Bridgestone Museum in Japan. I wanted to be as drastic as possible when choosing the location of the museum that I was first going to share with the students. Japan is completely on the other side of the world and I wanted to prove the point that with Google Art Project we can virtually travel to museums all over the world. The class and I looked at a few pieces of artwork that Google Art Project has available online which had an excellent feature that allowed us to significantly zoom into the artwork. While looking at the artwork, I challenged the students with dozens of questions that a museum docent may ask while touring an art museum (see Appendix K). I also referenced Burnham and Kai-Kee’s (2011) example questions that museum educators ask:

“What do you see?
What's going on in this picture?

Why do you think someone would “paint” a work of art like this?

What do you think it reveals about the artist?

How do you think he made this?

What do we call this kind of “painting”?

Does this picture have any meaning? (p. 85-6)

I attempted to make our time in the classroom as museum-like as possible. At first, students seemed cautious to answer my questions. Once the students were warmed-up to the idea of being able to voice their opinions and not have to raise their hands, the conversation gained momentum. I had to show the students that there were really no wrong or right answers in voicing their thoughts. When looking at art, as long as can explain what you are seeing and feeling as well as support your opinion, then your opinion is valid. In addition, if a student could not explain what they were thinking, I encouraged other students to jump in. The students and I worked together to analyze what we were seeing.

After discussing the artwork, I entered the name of the museum onto Google Earth. Google Earth then takes you from an image of the entire world and zooms into the exact location of the museum. As stated on Google’s website, “Google Earth allows you to travel the world through a virtual globe and view satellite imagery, maps, terrain, 3D buildings, and much more” (https://support.google.com/earth/answer/176145?hl=en). The students and I were able to see the shape and size of the museum in relation to surrounding buildings. I was trying to put the location and the distance from Buffalo, NY into perspective for the students.
At the end of class, I showed the students that there was a short homework assignment on Schoology that they need to complete by the end of the week. Schoology is a free, online tool that allows teachers and students to stay connected. According to Schoology’s website, “Our mission is to empower you—to give you the tools and connections to engage students more efficiently and improve educational effectiveness on both a large and small scale” (https://www.schoology.com/mission.php). I use the website to post homework assignments, handouts, and remind students of project due dates. The homework assignment asked the students for their initial comments and feedback from our class that day:

1. What did you not like about the virtual visit?
2. What did you like about the virtual visit?
3. What else would you like to do during a virtual museum visit?

Responses from my students proved to be significant data for my study and supported what I noticed during class, that students enjoyed the open dialogue. Heather commented on Schoology, “I like that we were able to tell you what we saw and voice our opinions.” Sarah commented, “I liked that we were able to shout out anything we wanted to.” Veronica wrote, “I also liked how it was an open discussion.” Not only did the students enjoy participating in a museum-like discussion, but also they appreciated the ability to see artwork from museums all over the world as I cover in the following section.

**Students Appreciated the Accessibility of Artwork**

Throughout the study, as the students and I viewed artwork from different parts of the world, students acknowledged the excitement of seeing the artwork without having to travel to the museum. As the study progressed, the students enthusiastically asked,
“Where are we traveling to next, Ms. James?” On Schoology, Carrie wrote, “I liked that we could see artwork from artists all the way across the world that are pretty much impossible for us to visit.” John commented, “I liked that we could see paintings up close that are across the world.” Allison said, “I liked that we got an opportunity to look at different artwork from artists in different areas of the world.”

On the second day of my research, we focused on looking at contemporary artwork from around the world. We used Google Art Project again to visit the Ullens Center for Contemporary Art in China but via the iPad and AirPlay over to the projector. Airplay is a wireless device that allows my iPhone or iPad to communicate to the projector in my room. When I have airplay turned on with either device, what is displayed on the iPhone/iPad is mirrored onto the projector. Through the Ullens Center for Contemporary Art in China, we looked at two different artists and evaluated their artwork again using the museum-like open dialogue. Once again, students responded enthusiastically. They did not hold back comments; everyone had something to add to the conversation. The favorite question among the students, as we tapped through the paintings, was, “is this art?” The question sparked much debate in the classroom. Students contemplated the degree of difficulty in relation to considering the work art, Mike said, “I could never paint that, it must be art.” Jennifer responded, “It must have taken the artist a long time to make it.” Students were accessing art digitally and discussing the artworks as a class.

With the help of my tech-savvy students, we created an online museum using an Instagram account to feature artwork created in class (See Appendix I). My goal was to have our artwork accessible just like all of the museums we visited as well as incorporate
a technology element. Instagram was a perfect fit for this goal. According to the creators of Instagram, “Instagram is a fun and quirky way to share your life with friends through a series of pictures. Snap a photo with your mobile phone, then choose a filter to transform the image into a memory to keep around forever” (Instagram FAQ). Instagram users communicate primarily through a photo or short video with a brief caption. Instagram is incredibly popular with over 150 million users that post an average of 55 million photos per day (http://instagram.com/about/faq/#).

I signed up for a new Instagram account and shared the username and password with the class. I asked my students to sign in and post their artwork. By doing so, the students and I created our own virtual museum where all of their artwork is collected in one place (see Appendix I). As students willingly participated in classroom discussions and activities, technology helped maintain their interest.

**Technology Grabbed the Student’s Attention**

Technology proved to be extremely helpful in grabbing the students’ attention throughout the study. According to the pre-questionnaire, students have experience with many different forms of technology. Computers, tablets, Skype, Microsoft Office, Photoshop, Twitter, and Facebook were predominately used by most students. However, the data from student questionnaires showed that teachers and students were not using technology in a creative manner in the classroom. Incorporating technology into the classroom is more than having students take a photo with a camera or type an essay on Microsoft Word. Using technology creatively requires, among other venues, using social media sites to engage and communicate with students, since this is a preferred means of communication for them. The pre-questionnaire showed that technological tools were
used on a basic level in the classroom. For example, students use computers to look up answers, PowerPoint for projects, and the Smart Board to look at notes. Having this knowledge, I knew if I could use these forms of technology in new ways in my classroom, I would have my students’ attention. For one class lesson, the students and I used the iPad, connected it via Airplay to the projector to use the Art Museum Timeline App for iPad. This app has a timeline of dozens of artists from the 14th to 20th century. As I introduced the lesson, students listened attentively, observing as I setup airplay and called up the Art Museum Timeline App. Students responded, “That is so cool, how did you do that?” and “Can I have the password so I can try it with my iPad?”

Students passed the iPad around the room taking a turn to choose an artist from the timeline and then one of their artworks. The students were not familiar with a majority of the artists so their choices were random. Once they chose the artist, the piece of artwork they chose was the one that stood out the most to them. After students chose a work of art, I used the art-viewing museum questions again to get the conversation going and bring the museum-style dialogue into the classroom (see appendix K). One of the favorite questions was naming the work of art. The students were extremely literal which everyone found comical. For example, when we looked at Normal Rockwell’s painting, “Election Day,” before students knew the actual name of the painting, they brainstormed a name themselves. I received answers such as, “Husband Yelling at His Wife While Pointing at a Newspaper” and “Child Crying on the Floor While the Parents Ignore Him.” Although in that particular moment, students may have become slightly off topic while naming paintings, students were engaged and participating. I observed this engagement continuing throughout the lesson as the students and I were able to look at many pieces of
artwork quickly due to the ease of using the iPad, have meaningful conversations, and
even laughing.

For other lessons, I used my personal phone instead of the iPad to project over
AirPlay. Some apps are only available on the iPhone and not the iPad. To my surprise,
students were even more intrigued by the simple fact that I was using my personal
iPhone. Students asked, “Is that your phone Ms. James?” “What apps do you have on
it?” and “Ms. James, do you have Instagram?” I witnessed being able to get my students’
attention with minimal effort. In the art room, I routinely showed projected images of
various artists and their works on a daily basis. Students seeing artwork was nothing new
in my classroom. What was new, was the technology and means of accessing art, with
Apple products and Apps, which sparked interest among my students.

Using technology as a mean to bridge the gap between the art museum and the art
classroom produced several positive findings in this study. Using technology in the
above ways resulted in favorable reactions to museum-like dialogue, increased
engagement in class participation, and access to artwork from around the world. With
that said, some problems also arose with the use of technology.

Technology Worked Inconsistently

By the second day of my study, I learned that technology does not always work
the way it is designed to work. I used the iPad connected to the projector through
AirPlay, but Safari, the default search engine for the iPad, froze on the Google Art
Project website. With the pressure of 26 students staring and waiting, I was not able to
get Safari working again in a timely manner. Many factors could contribute to Safari
freezing: an issue with the iPad, Safari, the website, the Internet, or the projector. While
teaching in a limited, set time for each class period, I do not have the time to diagnose the issue rather I needed to move on to a backup plan to continue teaching. I jumped over to my desktop computer and finished the presentation.

The quality of the image the projector displayed on the screen was not always conducive to viewing artwork. The quality of the image was high whether it was on the desktop computer, iPhone, or iPad, yet when projected onto the screen, image quality was lost. One possible reason for the loss in quality was due to the brightness in my classroom. My classroom has two walls of windows and no curtains. The second possible reason for image quality loss was due to the projector itself. After speaking to my school’s technology coordinator, he confirmed that the projector does not display high-resolution images like a computer or iPad. Having a quality projector is essential for showing quality images.

Not only did I notice the lack of quality in the projected image, but the students noticed as well. Within the feedback from Schoology, 12 of the total 23 students who completed the assignment remarked on the low quality of the projector image and that the artwork was difficult to see. Jody commented, “I didn’t like how we really couldn’t see all of the coloring very well. The projector screen made it much harder to see the fine details of each piece.” Allison wrote, “I didn’t like that the display made the coloring and picture look different than on the actual screen.” Rebecca commented in her interview, “I don’t really like it because you don’t get to see the detail as well as you would if you were there.” The quality of the image was a concern for all of us. In addition to technological setbacks, some students reported that they would rather be working on more hands-on lessons.
Students Preferred Creating Artwork

Virtually traveling to art museums around the world, some students reported that they would rather be creating artwork instead of looking at artwork. Out of all of my findings, I found this to be the most surprising. Before I began the study, the fact that students would prefer creating art rather than viewing art never crossed my mind. I was not aware my students felt this way until I read their feedback comments on Schoology, after the first class. Tammy commented, “I did not like how we didn’t do any art like drawing or painting. I would like to draw in our sketchbooks for more amusement; I think that would help our learning.” Tammy, as a senior, has taken art classes before and is relatively good at drawing and painting. Knowing this, I can understand why she felt the class should be making art instead of looking at art since that is what she is most passionate about. Brianna, also a senior in her third art class, commented, “I’d rather do stuff that is hands on and that us students are actually a part of.” During the lessons, I observed Brianna having a disconnect in relating to the artwork we were viewing. As a new teacher in this school, I concluded, based on these two comments by Tammy and Brianna, that viewing and discussing art was not something they had experienced before in other of their art experiences.

For the most part, I agreed with my students. A perfect lesson would balance teacher input with student input as well as balance the instructional time with the studio time. After my first lesson, I made a conscious effort to get the students more involved and modeled a constructivist-style classroom. Students choose the artwork we would analyze and students used the iPad to control the screen. I spent the rest of the study incorporating more ways for students to be involved in the lessons. However, no matter
what changes I made, the virtual lessons were not on the same interest to the students as a full, studio workday.

**Conclusion**

To recap, as I used technology to bring the art museum to the art classroom, several findings emerged from the data. Students responded positively to the museum-like discussions we had in class. They were active participants and loved the opportunity to give an opinion. Students also enjoyed the fact that we were accessing artwork from all around the world. They found it interesting to be able to see a work of art in a museum located in Japan. In addition, the study uncovered that technology is one tool to grab students’ attention. My students waited patiently to see what technology I was using that day—whether we were using the iPad or an interactive website. Even though technology is a great way to grab students’ attention, it is not always consistent. Lastly, some students preferred to be creating artwork rather than looking at and talking about artwork. All of these findings formulated my study results.
Chapter 5: Results and Recommendations

I designed this study to uncover the ways in which technology could be used to bring the art museum into the art classroom. My goal was to use technology that I already had available to access art museums from my classroom. After analyzing my findings in chapter four, I discovered two emerging themes: students gain enjoyment and value when virtually visiting art museums and virtual art museums provide teachers with tools to help students learn.

Students Gain Enjoyment and Value When Virtually Visiting Art Museums

Overall, students enjoyed virtual visiting art museums. As documented earlier, the technology grabbed and maintained their attention. The technology component of the lesson sparked an interest in viewing and discussing art. Students use technology every day; it is a part of their world. Several students reported in their interview that the best part of the study were the days we passed around the iPad. Even though the iPad has been out for several years, students still have the urge to get their hands on one and use it. In addition, the iPad was mirrored onto the projector screen, so for students, it was like they were running the class. When the technology took us to the museum, students wanted to look at different artwork by various artists from around the world. They were intrigued by the concept of accessing art that was on the other side of the globe. According to the pre-questionnaire, most of they could only name one to two art museums. Virtually traveling to art museums all over the world exposed to students to a vast number of artists, artworks, and museums with just a few taps on an iPhone or iPad.

Students enjoyed the use of technology and looking at artwork, and surprisingly the dialogue as well. Mirroring our classroom conversations like the dialogue between a
museum docent and visitors sparked interest among my students. As students and I analyzed artwork, they really liked voicing their opinions and interpreting each work of art for meaning. By using Constructivism, the learning was student-centered. The students were able to discuss how they felt while I sneaked in more and more content through the classroom dialogue. I made the connection that other subjects may not always be conducive to this type of classroom discussion. I feel that students really appreciated the change of pace, being able to voice their opinion, and to be silly at times with their answers. If the student could support their opinion, which they did no matter how silly it seemed, then their opinion was considered valid. Students enjoyed and valued our virtual visits to the art museum because it gave them the opportunity to use technology, look at art all over the world, voice their opinions, and build confidence with dialogue in the art classroom. In addition to this result, I want to point out how technology is a classroom tool to help students learn.

Technology Provides Teachers with Tools to Help Students Learn

As a constructivist teacher, I strongly agree and rely on forming my art lessons and therefore my art curriculum around my students. I do my best to engage students and tie the information back to their life experiences. I want my students to apply what we are learning to their daily lives. The technology component was a huge success in my effort to keep the art curriculum student-centered as students are constantly in contact with an element of technology. Keeping the lessons about the students, I maintained their attention, and was able to share information with them. Even better, the students recognized this as well. In an interview with Kim, she discussed at length with me how the museum we virtually visited and the artwork we saw inspired her art project the next
day. Kim said, “The technology helped us get a perspective and visuals for our current art project. It gave us background information for our projects.”

**Recommendations**

Two recommendations emerged from this study. As in most research studies, the more time a researcher spends in the classroom, the more data he or she collects. Even with my behind-the-scenes view, I still feel as though my time researching in my classroom was not enough. I recommend as a future study that data should be collected for more than two weeks.

A second recommendation for teaching is for the researcher experimenting with technology, to always have a backup plan for each lesson. As mentioned earlier, technology works inconsistently. Many elements that go into making technology tools work. If one aspect is not working, the Internet for example, it will bring your lesson to a grinding halt. Be prepared so if something stops working, you have another lesson you can move onto or a different way to teach the material. I also recommend practicing working with the technology during a planning period or before school and not in front of the students. I found working with the technology beforehand, helped me to work out the kinks and get more familiar with my lesson.

**Conclusion**

Throughout this study, I was pleased to learn that my students were interested in bringing technology into the classroom to access art museums. When students can relate to content, learning happens. From my personal teaching experience, students were more likely to remember what I was teaching if they had the opportunity to use the iPad during the process. Although more time would have improved the study by giving more time to
prepare for the unreliable nature of technology, the research still showed that technology is a tool that can be manipulated to grab students’ attention at the same time as teaching the content in my art curriculum. In conclusion, I found that technology can effectively be used to infuse the art museum into the art classroom. As more and more tools emerge in the market, more opportunities will arise to explore this variety of technologies, if teachers are willing to take that leap.
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*Art Education, 62*(1), 41-47.


Wetterlund, K. (2008). Flipping the field trip: Bringing the art museum to the classroom. 

*Theory Into Practice, 47*(2), 110-117.


Alexandria, VA: ASCD.
Appendix A: Visual Abstract

Infusing the Art Museum Into the Art Classroom
Curriculum through Technology

In a perfect art curriculum, the teacher and students would be able to travel to the art museum without limitations.

Closing the knowledge gap of incorporating art museums into the art curriculum would allow art teachers to utilize the benefits from both professional fields and create an integrated curriculum.

Technology is the key component to reach students and aid in closing the knowledge gap between the art museum and the art classroom.

Research Questions
• How might the art teacher make greater use of technologies to infuse the resources of art museums into the art classroom?

• How might museum education methods translate into the art classroom and the art curriculum using technologies?

• What changes in curriculum result from implementing the virtual art museum into the art classroom?

• How will students respond to the use of technology in the art classroom?

• How can bringing the virtual art museum into the classroom benefit the students and teacher?

Findings
Positive Reaction to Museum Like Discussions
Students Appreciated the Accessibility of Artwork
Technology Grabbed the Student’s Attention
Technology Worked Inconsistently
Students Preferred Creating Artwork

Data Collection
• Observations
• Field Notes
• Interviews
• Student Artwork
• Charting

Literature Review
Curriculum Design
The Role of the Art Museum in the Curriculum
Teaching Strategies of the Museum Educator to use in the Art Classroom
Demonstrating the Needs and Purposes for Technology in Art Education
Infusing the Art Museum into the Art Classroom With Technology
Appendix B: Letter of Consent to Principal

August 27, 2013

Mrs. [Name]
School Principal

Dear Mrs. [Name],

As a graduate student at Buffalo State College, I am conducting a research project in order to find how using a variety of technologies might allow me to bring aspects of the art museum into the art classroom. I want to provide the 2D Studio in Art class an opportunity to interact with museum resources available through various types of technologies.

I will be collecting data through observation of my own classroom, specifically the 2D Studio in Art class during the first semester of the 2013-2014 school year. In addition to observation, I would like to interview the students, document their artwork, and collect audio recordings of interviews and videos of classroom proceedings. The audio and video recordings will ensure that taking field notes will not interfere with teaching.

The school’s participation will be helpful to my research project and there are minimal risks. The routine of my classroom, its students, and all information will be confidential and used for research purposes only. Pseudonyms will be used to protect the identity of our school and its students.

I would certainly appreciate your consideration of this request to further my graduate research at Buffalo State College and to further my own education and that of others on this subject matter in the visual arts.

If you are willing for me to do this research in my art classroom, please initial the appropriate space and sign below. If there are any questions, please contact me at (585) 478-4862, or email me at lamesltd@gmail.com.

Thank you,

Laura James

________ I approve the study described above

-OR-

________ I do not approve the study described above

Signature: ...…………………………………….. Date: ……………..

Print Name: ……………………………………………………..

*If you are unable to reach a member of the research team and have general questions, or you have concerns or complaints about the research study, research team, or questions about your rights as a research subject, please contact Gina Game, IRB Administrator, SUNY Research Foundation of Buffalo State at (716) 878-6700 or gameg@cubuffalo.edu.
Appendix C: Letter of Consent to Participant’s Guardian

September 30, 2013

Dear Parents/Guardians:

I am writing to ask permission for your son or daughter to be a part of my art study this coming school year, 2013-2014, which includes the 2D Studio in Art Course. As a graduate student at Buffalo State College, I am completing a research project to explore ways to use more technology in the art room and at the same time use that technology to bring the art museum into our art classroom.

The goal of my research is to understand how art teachers might make greater use of technologies to infuse the resources of art museums into the art classroom. Your student will gain more experience with technology and be exposed to art museums located all over the world. My art curriculum will continue to remain in line with __________ mission.

Protecting your child’s privacy is extremely important to me. I will use pseudonyms during my study; everything will remain confidential. I am only looking to observe and record the daily routine of our classroom. I may ask the students to complete a simple questionnaire, ask them a few questions, and take photos of the classroom and the artwork. Because I do not want observation to interfere with teaching, I will be using an audio recording of our classroom proceedings.

Your child’s participation is completely voluntary. You and your child have the right to withdraw at any time from the study without penalty. In that case, I will not use your child’s words or images of artwork in my project, however, your child will be expected to continue to participate in the normal operations of the class.

I sincerely appreciate your time and willingness to help me in my professional development. If there are any questions, please contact me through the school’s phone number, or you can email me at __________.

Thank you,

Ms. Lamia James

__________ I give permission for my student to participate in the study described above.

-OR-

__________ I do not give permission for my student to participate in the study described above.

Your Child’s Name (Print): __________________________________________________________

Parent/Guardian Name (Print): ______________________________________________________

Parent/Guardian Signature: ___________________________________________ Date:________

*If you are unable to reach a member of the research team and have general questions, or you have concerns or complaints about the research study, research team, or questions about your rights as a research subject, please contact Gina Giambrone, IRB Administrator, SUNY Research Foundation of Buffalo State at (716) 878-6700 or giambrone@buffalostate.edu.
Appendix D: Letter of Consent to Student

September 30, 2013

Dear Student:

I am writing to ask your permission to be a part of my art study for this school year, 2013-2014, which will include the 2D Studio in Art class. We are going to focus on using technology in the art room such as using iPads, the mobile computer cart, and Schoology. We are also going to be looking at websites from art museums across the globe. For example, since we cannot travel to Europe whenever we want, we are going to try to use technology to "virtually" visit art museums in Europe such as the Louvre, where the Mona Lisa is displayed. Ultimately, it does not change anything that we would already be doing in our class.

I am going to be audio recording our classes so I can learn from our discussions. I may also ask you a few questions and take photographs of your artwork. If you are okay with recording our art classes, please mark the appropriate line. If you do not want to be a part of the study, please mark the appropriate line. This study is completely voluntary. At any time, you can change your mind and decide not to participate in the study without penalty. This means that I will not use your words or your artwork in my final project. However, you will still be expected to participate in the normal activity of the art classroom.

I really appreciate your time and allowing me to learn from our art classes. Thank you for helping. If you have any questions, please feel free to ask me.

Thank you,

Ms. James

☐ I agree to participate in the study described above.

-OR-

☐ I do not agree to participate in the study described above.

Your Name (Print): __________________________________________________________

Your Signature: ___________________________________________________________________

**If you are unable to reach a member of the research team and have general questions, or you have concerns or complaints about the research study, research team, or questions about your rights as a research subject, please contact Gina Gane, IRB Administrator, SUNY Research Foundation of Buffalo State at (716) 878-6700 or ganege@buffalostate.edu.
Appendix E: Student-Participant Interview Template

Student Interview Questions Outline

I. Information about the Interview:

Interviewee: ____________________  Interviewer: ____________________

Date: ____________________  Time: ____________________  Place: ____________________

II. Consent and Introduction
- Introduce yourself
- Review the study’s purpose, how long you expect the interview to take, and your plans for using the results from the interview
- Note that the interview will be audio recorded and that you will keep their identity confidential.

III. Ice Breaker Question
1. Recently, we have been using more technology and looking at many art museums, what are some of your thoughts about what we have been doing in the art room?

IV. Interview Questions
2. What do you think about the ways we are using technology to study about art and artists? How is the technology helping you in the classroom or even not helping you?

3. Compared to our art class last school year, how is this year different?

4. What do you think about looking at art museums within our classroom, our virtual museum field trips, to learn more about art?

5. What was your favorite thing about what we have been doing in the art room since the beginning of the school year? What did you learn from it?

6. I know I have a least favorite lesson we did in class. What was your least favorite thing we did? How could we make it better?

7. What would you like to see us do in the art room?

8. What else would you like to tell me about?

V. Wrap Up and Thank Participant for Time
- Thank you very much for your time today. I appreciated hearing your insights on what we have been working on in our classroom.
Appendix F: Technology Tracking Chart

<table>
<thead>
<tr>
<th>Technology</th>
<th>Date Used</th>
<th>Used By: Teacher and/or Student?</th>
<th>How did it bring the new technology into the classroom?</th>
<th>Teacher Reaction</th>
<th>Student Reaction</th>
</tr>
</thead>
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</table>
Appendix G: Student Questionnaire

STUDENT QUESTIONNAIRE

Name: ___________________________ Grade: 9 10 11 12

1. Have you ever been to an art museum? Yes or No

2. If the school offered a free field trip to a local art museum, would you want to go? Yes or No

3. List as many art museums you can think of:

4. What are art museums for?

5. Circle each technology that you know how to use:

<table>
<thead>
<tr>
<th>Art Museum App</th>
<th>Blogger</th>
<th>Camera</th>
<th>Computer</th>
<th>Document Camera</th>
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<td>Google Art Project</td>
<td>Google Drive</td>
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<td>Pinterest</td>
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<td>Projector</td>
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<td>Quizlet</td>
<td>Schoology</td>
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<td>Smart Board</td>
<td>Smart Phone</td>
<td>Tablet</td>
<td>Television</td>
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<tr>
<td>Twitter</td>
<td>Video Camera</td>
<td>YouTube</td>
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</tbody>
</table>

Other: __________________________________________________________

6. Describe how you have used any form of technology in school. List as many as you can think of: (For example, I used the Internet in Science class to research my project.)
Appendix H: Classroom Layout
Appendix I: Classroom Instagram Examples
Appendix J: Lesson Plan Example

LAURA R. JAMES
EXPLORING THE 9/11 MEMORIAL
2D STUDIO IN ART
GRADE LEVELS: 9-12
FALL 2013

Big Idea for Lesson
Using the 9/11 Memorial Guide App and the Explore 9/11 App, the students will take a virtual field trip to New York City to see the 9/11 Memorial. This lesson is done to open up the possibilities of virtual travel for students. Even though they are under 18, there are still possibilities to see what our world has to offer—to show students a bigger world outside of their small suburban city. This is also done to prepare the seniors for their upcoming trip to New York City.

New York State Learning Standards
Standard 1: Creating, performing, and participating in the arts
Standard 2: Knowing and using art materials and resources
Standard 3: Responding to and analyzing works of art
Standard 4: Understanding the cultural dimensions and contributions of the arts

Common Core for the Visual Arts
Although there is not a set common core for the visual arts, educators have been working to link the visual arts into the existing math and ELA common core. Just how for ELA, the common core calls for reading, interpreting, and answering questions about what the student just read, the same can be done with art. Art educators are calling this, “reading artwork.” Analyzing a work of art like a detective would a crime scene allows students to see the meaning of the work. The same can be done when reading text. Students read a given text and are asked to uncover and interpret the meaning. Practicing analyzing artwork in the art room can help students analyze literature for ELA.

Information from: http://www.arts.gov/artsducation/arts-education/visual-arts/

Plan
Using the 9/11 Memorial Guide and the Explore 9/11 Apps, the teacher will go through what the apps have to offer with the students. Using the iPad, the teacher will set up the mirror feature, using AirPlay, which allows what is viewed on the iPad, to be viewed on the projection screen so that all students can see. Going through the app takes time. Keep the lesson student-centered by incorporating the students to navigate through the app and allow them to decide what to click on next. The 9/11 Memorial App allows user to see the memorial from a bird’s eye view. There are two memorial pools. Allow the students to take turns clicking on the memorial pool and virtually exploring the names on the cobblestones as well as the corresponding stories. Set my discussion like a docent would in a gallery. Make the point that although we are not standing in front of a painting, that a memorial is a piece of art and what a memorial has to offer can be analyzed just like we would analyze a painting. The Explore 9/11 App will allow my students to explore the memorial on a different level as it takes you through a timeline of the events that happened that day. The App breaks it down into times and major events as well as stories and photographs from that day. The students will continue pass on the iPad and choose what they would like to explore. As we explore, I will ask the looking at art museum questions to encourage the students to interact with what they are seeing.
Appendix K: Looking At Art Questions, page 1

LOOKING AT ART: SEEING QUESTIONS

The following questions were supplied by Prof. Craig Rieand of the University of Florida, Gainesville.

He is also the creator of the terrific Art Junction and Art Education 2.0 web sites.

When looking at a work of art, students might be asked to:

Describe it.
What kinds of things do you see in this painting? What else do you see?
What words would you use to describe this painting? What other words might we use?
How would you describe the lines in this picture? The shapes? The colors? What does this painting show?
Look at this painting for a moment. What observations can you make about it?
How would you describe this painting to a person who could not see it?
How would you describe the people in this picture? Are they like you or different?
How would you describe the place depicted in this painting?

Relate it.
What does this painting remind you of?
What things do you recognize in this painting? What things seem new to you?
How is this painting like the one we just saw? What are some important differences?
What do these two paintings have in common?
How is this picture different from real life?
What interests you most about this work of art?

Analyze it.
Which objects seem closer to you? Further away?
What can you tell me about the colors in this painting?
What color is used the most in this painting?
What makes this painting look crowded?
What can you tell me about the person in this painting?
What can you tell me about how this person lived? How did you arrive at that idea?
What do you think is the most important part of this picture?
How do you think the artist made this work?
What questions would you ask the artist about this work, if s/he were here?
Appendix K: Looking At Art Questions, page 2

Interpret it.
What title would you give to this painting? What made you decide on that title?
What other titles could we give it?
What do you think is happening in this painting? What else could be happening?
What sounds would this painting make (if it could)?
What do you think is going on in this picture? How did you arrive at that idea?
What do you think this painting is about? How did you come up with that idea?
Pretend you are inside this painting. What does it feel like?
What do you think this (object) was used for? How did you arrive at that idea?
Why do you suppose the artist made this painting? What makes you think that?
What do you think it would be like to live in this painting? What makes you think that?

Evaluate it.
What do you think is good about this painting? What is not so good?
Do you think the person who painted this do a good or bad job? What makes you think so?
Why do you think other people should see this work of art?
What do you think other people would say about this work? Why do you think that?
What grade would you give the artist for this work? How did you arrive at that grade?
What would you do with this work if you owned it?
What do you think is worth remembering about this painting?