USING TEACHER WEBSITES AND STUDENT DIGITAL PORTFOLIOS TO ENHANCE STUDENT LEARNING:

A CASE STUDY OF FREEPORT HIGH SCHOOL, MAINE

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ABSTRACT

We live in a visual world constantly surrounded by technology. Technology has altered the face of educational environments. Freeport High School in Freeport, Maine is one of sixty-two schools participating in the Maine Learning Technology Initiative (MLTI). This program was one of the first statewide programs for equipping seventh to twelfth grade students, and their teachers, with technology. This qualitative study incorporated surveys, online investigations, and classroom implementation to explore how students and teachers had been using their iPads for educational purposes. This study was a classroom-based study that took place in high school studio art courses where the researcher was also the teacher. While collecting data from student and teacher surveys the researcher focused on improving her practice by reflecting on her own integration of technology in her studio art classrooms. This study also focused on investigating ways in which iPads can help studio art students document their own learning by creating digital portfolio websites reflecting their artistic process and final products. The teacher and student websites resulting from this study were created as frameworks for sharing knowledge, learning, and understanding. The results of this study encourage art educators to integrate technology into their curriculum specifically through the use of student digital portfolio websites. In addition, teachers are encouraged to improve their curriculum transparency by creating and maintaining helpful teacher websites.
ACKNOWLEDGEMENTS

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CHAPTER ONE: INTRODUCTION

Background to the Study

We live in a visual world constantly surrounded by technology. While walking through a grocery store, standing in an elevator, or eating dinner at a restaurant it is common to look around and see many people ‘plugged’ into technology. Smart devices are everywhere and social media is taking the place of live interactions. In recent years, many school administrators have created new rules focused on technology. Schools have started to integrate technology into their curricula, which has altered the face of educational environments. Overby (2009) argues that educators give many reasons for not using the latest technological applications available. However, the author further argues that unless teachers start incorporating these new approaches, they are creating a large disconnect between this generation of tech-savvy students and the educator’s ability to stimulate meaningful learning opportunities. As art educators say, we sometimes offer students opportunities to create using computers and digital cameras, but we often forget to integrate technology into daily studio activities, namely, reflecting about art.

When integrating new technology teachers should try to stay motivated and connected to their learning objectives. Bitner and Bitner (2002) write:

Motivation to endure the frustration and turmoil of the change process must be present. Change is not easy and is sometimes even painful. For teachers to suffer this unease and pain, they must be motivated. Often the intrinsic motivation will come as they see the possibilities that technology can offer their students. (p. 98)

Michael Fullan (2001) argues that “schools are beginning to discover that new ideas, knowledge creation, and sharing are essential to solving learning problems in a rapidly changing society” (p. viii). Connections can be made in order to improve practice of fostering 21st century
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learning skills through technology and collaboration. Jonassen, Carr, and Yueh (1998) argue that computers can most effectively support meaningful learning and knowledge construction in higher education as cognitive amplification tools for reflection on what students have learning and what they know. Rather than using the power of computer technologies to disseminate information, they should be used in all subject domains as tools for engaging learners in reflective, critical thinking about the ideas they are studying.

Technology is a heavily debated topic in art education. Some teachers are against integrating technology into their curricula while others readily explore and experiment with innovative pathways connecting technology to their art classrooms. Gregory (2009) articulates that as teachers:

We must get off our podiums, turn off teacher-created PowerPoint presentations and turn the reigns of learning and social learning technologies over to our students so that they can construct their own knowledge, meaning, and solutions. We must empower learners, place them in charge of their own learning and allow them direct and frequent access to computer learning technologies. (p. 47)

Given this, the purpose of this study was to explore technology integration in art education and the challenges and opportunities that are associated with it.

**Research Goals**

This study focused on creating an improved, transparent, and innovative art education curriculum that included technology integration and enhanced student learning through the use of teacher and student websites at Freeport High School in Freeport, Maine. Data collected on helpful website features and resources led to an improvement of the teacher’s website. iPad applications designed to photograph images of artwork and create narrative videos were explored
in order to have students use the applications to create reflective videos documenting their artistic process from the origination of an idea to the final work of art. The reflective videos were linked to the student and teacher websites and made visible to parents, peers, and faculty at Freeport High School. Integrating iPads for documentation and reflection of artistic process supported the goal of student-centered learning and helped hold students accountable for their learning.

**Research Questions**

The study focused on investigating how to use readily accessible technology as educational sharing devices in high school studio art classrooms. Four main questions were investigated:

- What are the strategies that can be used by art educators while integrating technology into their studio art classrooms that can enhance student learning and understanding?

Specifically, within the context of this study,

- How might teacher websites be used as a way to support student learning and understanding in a studio art classroom?

- How might student digital portfolio websites in a studio art classroom reflect the students’ artistic processes and learning?

- What kind of implications does this kind of study hold for art educators wishing to integrate technology into their classrooms?

**Conceptual Framework**

This study investigated how iPads could be used to create innovative teacher and student websites at Freeport High School with the emphasis on enhancing student learning and understanding. The framework of this study included prior knowledge, areas of research
investigating how one can use iPads in art education to enhance student learning, and researching articles about technology integration found in scholarly art and technology journals. Students were asked to identify the most helpful ways that teachers at Freeport High School used their teacher webpages in order to help the researcher improve her own website and pedagogy. Data was collected through surveys, online investigations, and classroom implementation. Data analyzed about the teacher and student websites encourages other teachers to evaluate how they use iPads and class websites as a way to improve teacher growth and development and support student learning. It was the researcher’s hope that this study provided a framework for using teacher and student websites as a wonderful way to connect to the digital world and provide evidence of learning to administrators, parents, and colleagues.

**Theoretical Framework**

Arts integration was the lens used throughout the study. Student learning was demonstrated with the use of technology integration with student-created digital portfolio websites. This study encouraged students to take ownership of their learning when using the iPads to create reflective videos describing their artistic process. “In the art class the procedure of reflecting visually and verbally on artmaking processes and encounters with art make use of a cognitive ensemble of thinking, feeling, and forming skills that are central to sustained learning” (Sullivan, 1993, p.17). The teacher and student websites served as fluid documents reflecting the process of learning in art education. Marshall (2010) encourages art educators to integrate a variety of content from other disciplines into their curriculum. “When we see things in new contexts we often understand them differently and find new meaning in them” (Marshall, 2010, p. 16). During this study, students were able to digitally document their artwork and reflect on their artistic experience through writing, speaking, and creating videos.
Significance of the Study

Teaching is about sharing, not secrecy. In the field of art education, one of the best ways to promote the learning that occurs in the classroom is through art exhibitions. Chapman (2004) writes:

Portrayals of the arts only as hands-on activities may reinforce stereotypes that the arts are mindless— a frill, bonus or ‘enrichment.’ An easy first step is to ensure that exhibitions/performances of student art include a written or oral narrative about what students have learned. (p. 14)

This study tied art exhibitions into the digital world by having students share their motivation, process, and learning on their digital portfolio websites. Teacher websites can serve as digital resources connecting to the global world. Curriculum can be made public on teacher websites, supporting and documenting the teaching and learning taking place in an art room. In addition to exhibiting student artwork in the school gallery, this study had students create and post quick response (QR) codes next to their artwork. These QR codes were linked to the student digital portfolio websites making it possible for any viewer with a smart phone or tablet to learn more about the artwork by quickly linking their smart device to the online student digital portfolio reflections. Digital technology was used as a way to try to share the learning taking place in an art room. Fullan (2001) writes that the “best teachers integrate the intellectual, emotional, and spiritual aspects of teaching to create powerful learning communities” (p. 27). This study helped create a digital learning community for the students and the teacher through digital sharing using websites.

The goals of the study included promoting 21st century learning skills and aligning curriculum with Freeport High School’s mission statement and the Maine Learning Results in
regards to using technology and reflecting on learning. Integrative and collaborative technology is one of the core instructional goals for the state of Maine and Freeport High School.¹

In a study focusing on distance learning, websites, and art education, Akins, Check, and Riley (2004) found that their online “communication with students was actually more frequent and detailed than in a traditional classroom” (p. 36). They “also found that online teaching provides students with resources often lacking in face-to-face classrooms, such as the ability to reference previous materials and discussions when memory fails or the teacher is unavailable” (p. 36). This study explored data collected from students specifically referencing resources they find helpful on teacher websites. The teacher used the data to improve her own webpage thus enhancing future communication and learning for her students. Innovative teachers use technology in order to engage students and positively influence learning experiences. By improving her practice and including iPad use in the classroom, the researcher had students utilize their iPads as tools to help them reflect and share their learning and artistic process with others through the use of website portfolios.

**Limitations of the Study**

There were several limitations in this study. The research and data collection part of this study occurred over a fourteen-week period limiting the study in its scope and content. While all participating students had their own school-leased iPads, not all of the students had the same level of technological confidence or experience with creating online digital portfolios or video narratives. In addition, limitations like students’ diverse socioeconomic backgrounds, access to wireless and computers at home along with their comfort in using technology came into play.

¹ http://fhs.rsu5.org
Issues can arise anytime technology is used ranging from power-outages to broken devices, creating additional barriers to the study.

Summary

Technology is becoming prevalent in many high school art classrooms and many teachers are being mandated to incorporate it into their curricula. This study explored ways teachers at Freeport High School used technology in their classes. Surveys, an online investigation, classroom implementation, and scholarly articles were reviewed for common themes in an attempt to find best practices for integrating iPads and technology into the researcher’s classroom. The study incorporated experiential knowledge, reflection, and analysis in order to find innovative and engaging methods of integrating technology into art education at Freeport High School. The researcher explored ways her students could use iPads as educational tools instead of gaming devices. The next chapter discusses literature focused on technology integration, professional development focused on technology, student portfolios, and student reflections in art education.
Definition of Terms

*Teacher Websites* - online platforms used for posting information about classes. Teacher websites can include a variety of information like: course syllabi, teacher contact information, resource materials, video examples, or hyperlinks to supplemental resources.

*Digital Portfolio Websites* - online platforms used for displaying artwork, artist statements, and in the case of this study, video narratives that document the students’ artistic processes.

*QR Codes (Quick Response Codes)* - computer created images that when scanned with a smart device like an iPad or iPhone open up specific websites. Scanning a QR code is often much faster than typing in a long website address.

*Smart Devices* - electronic devices that connect wirelessly to the internet. Often have a variety of applications and can be used similarly to computers, however, they are more compact and transportable than laptops.
CHAPTER TWO: LITERATURE REVIEW

When utilized well technology has the capability to enhance art education. However, as technology and devices continue to change, new knowledge and learning must be constructed in order to use the devices as tools to enhance learning. This study investigated how to use technology, specifically iPads, as educational sharing devices in a high school studio art classroom. Four main education themes were explored through the review of the literature: technology integration (Marshall, 2010; Bitner & Bitner, 2002; Gregory, 2009; Taylor, Carpenter, Ballengee-Morris, & Sessions, 2006; Koroscik, 1996; Akins, Check, & Riley, 2004; Hirumi, 2002; Bauer & Kenton, 2005: Jonassen, Carr, & Yueh, 1998) professional development focused on technology (Schrum, 1999; Strudler & Wetzel, 1999) student portfolios (Chapman, 2004; Stout, 1993; Sullivan, 1993) and student reflections (Overby, 2009).

Conceptual Framework

The conceptual framework found in Figure 2.1 details the research questions, prior knowledge, areas of research, research strategies, and connections of this study.
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Review of Literature

Technology Integration

A study conducted by Bauer and Kenton (2005) found that teachers in the United States “are generally under-prepared to integrate technology into their instruction in meaningful ways” (p. 520). While that study was conducted nine years ago, there are still many teachers who use technology more for personal use than professional use. Some teachers are uncomfortable using technology in the classroom because of privacy and censorship issues. Essentially, when
technology is utilized in classrooms, teachers have to relinquish control of the resources their students access. This lack of total control makes some teachers uncomfortable leading to less technology integration. Bauer and Kenton (2005) articulate five phases of teachers’ use of technology: familiarization, utilization, integration, reorientation, and evolution. They argue that most teachers do not surpass the utilization phase and that real change does not occur until the integration phase when teachers regularly incorporate technology into their curricula (Bauer & Kenton, 2005). In order to reach the fifth phase, evolution, teachers must become comfortable with change and student-centered learning.

Strudler and Wetzel (1999) describe three ways educators can use technology to enhance their teaching and their students’ learning. Teachers can utilize technology as a tool to make their classrooms more accessible. In addition, they can use it to facilitate access and communication with additional resources outside of the classroom space. Thirdly, it can be used as a way to supplement and enhance traditional approaches to instructional practices and curriculum (p. 64). Instructional strategies range from teacher-student e-mail communication to teacher websites with hyperlinks to supplemental videos and resources.

Teachers who integrate technology into their classrooms need to remember that their students are also going to face new challenges. Gregory (2009) reminds teachers to expect students to have varying experience and comfort levels when using technology. While many students regularly use technology for private communication purposes, some may have very little experience using technology for educational learning. Gregory (2009) encourages teachers to integrate technology slowly and wisely. While some students are tech-savvy and comfortable facing challenges, other students may have a tendency to shutdown when obstacles arise.
School administrators must be supportive of technology in order for teachers to implement it successfully. Strudler and Wetzel (1999) found that “knowledgeable leadership played an important role in establishing a vision, planning, and securing funding” (p. 68). When integrating new devices and approaches to learning, there is a great need for professional development in order for teachers to learn how to incorporate new programs and methodology into their curriculum. In addition to faculty development time, schools should have technology integrators who work one-on-one with teachers who are interested in incorporating technology into their curriculum. Schools should also have specific technology support personnel whose job entails fixing any technical issues that arise (Strudler & Wetzel, 1999). In order to make the most out of technology, schools must provide financial support focusing on technology resources. While many teachers are already mandated to use technology in their classrooms, the success of the integration depends entirely on the overall motivation and personal philosophy of the educator.

Bitner and Bitner (2002) argue that a teacher’s skill and attitude are the main determinants in whether technology integration fails or succeeds in a classroom. The researcher feels that working with technology can be both exhilarating and frustrating. The World Wide Web has provided endless opportunities for extended learning, however, technical issues can pop up instantly and one must maintain the desire to work around the problems in order to succeed. Some of the best technology lessons are learned through failure and creative problem solving. In general, technology integration takes a lot of time and teachers should have administrative and tech support in order to learn to use it as a tool to enhance student learning and understanding.
Student Portfolios

Gregory (2009) argues, “We all know students can use computers to create impressive final products. However, your focus as a teacher should be on how technologies can be used to help students learn” (p. 49). Taylor, Carpenter, Ballengee-Morris, and Sessions (2006) write that art teachers should teach with an interdisciplinary approach and should use computers as a “means by which we teach and not an end to what we teach…the use of a computer should help students and teachers think about art, not simply make art” (p. 102). When initially thinking of ways to incorporate technology into art classrooms, many art educators want their art students to create a final product, or work of art, using the computers as a creation tool. However, Gregory (2009) and Taylor, Carpenter, Ballengee-Morris, and Sessions (2006) encourage art teachers to integrate technology with the intention of focusing more on their students’ artistic processes and less on their final products.

Art educators have been using student portfolios as a form of assessment for many years. Student portfolios provide visual evidence of a student’s artistic growth and improvement over the course of a class. Many art educators regularly compare pre-instructional artwork to post-instructional artwork as a way to gauge student learning and understanding.

Student Reflections

Stout (1993) encourages teachers to have students journal about their artistic process. “Though the aim is academic, the journal still belongs to the students. It is a place for their emerging voices, where ideas about creation and response are uncensored and as speculative, unique, and as wild as they wish” (p. 40). In a similar vein, Overby (2009) writes, “Artists need a place to record and reflect on their ideas, whether it is a sketchbook or a group critique session. The act of explaining and validating artistic choices is invaluable to the process of art creation.”
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(p. 19). Digital portfolios can be used as a form of journaling requiring students to write about their inspiration, process, and product. By writing about or photographing their artwork on a daily basis, students are able to capture, and later share, the full meaning and inspiration behind their projects.

Learning in a studio art classroom is an active and dynamic process. Hirumi (2002) argues for student-centered environments where students “construct their own meaning by talking, listening, writing, reading, and reflecting on content, ideas, issues, and concerns” (p. 506). Sullivan (1993) articulates that in order for sustained learning to take place, art students must reflect visually and verbally on their process. Therefore, in order for art educators to truly know the meaning behind a work of art, students must be able to share their personal reasoning and process.

Summary

Technology provides opportunities for students to research further into a topic of their choice. In art education, if students want to dive deeper into a technical approach they can use Google or YouTube to research video directions and exemplars, helping to supplement teacher instruction and become accountable for their own learning. In general, articles and books from the past ten years show that when utilized well technology has the capability to greatly enhance student learning. Resources show many difficulties educators face when integrating technology. Most importantly, teachers must be willing and motivated to integrate technology into their classrooms and administrators need to provide adequate support and training for teachers in order for the process to work well. Resources provide ample evidence of the success of having art students document their process and product through portfolios and reflections. Digital portfolios provide a technological pathway for documenting students’ learning and
understanding. Portfolios and reflections provide evidence of progress that is helpful for teachers and students. Chapter three discusses the methodology of the study.
CHAPTER THREE: METHODOLOGY

Design of the Study

This qualitative case study was a classroom-based study that took place in high school studio art courses where the researcher was also the teacher. The researcher investigated how her students and colleagues had used technology and their iPads for educational purposes throughout the fall and winter of 2013. Data was collected from students and teachers on what they considered to be successful technology instructional practices utilized at Freeport High School in Freeport, Maine. Forty-five students were surveyed about their personal and educational use of technology. Eleven teachers were surveyed about their professional use of technology. Another survey was sent to the technology support department in order to gather background information about the Maine Learning Technology Initiative (MLTI) program as well as different viewpoints on technology and two technology staff members responded. Additional data was gathered via an online investigation of teacher websites. The researcher viewed the eleven teacher websites that student surveys mentioned as being helpful to their learning. Classroom implementation was the culminating phase of the study and included twenty-six studio art students creating digital portfolio webpages. The surveys, online investigation, and classroom implementation results were coded and analyzed in order to find connections.

Site Selection

The primary research of this study took place at Freeport High School in Freeport, Maine. Freeport High School is a public school in coastal Maine with a student population hovering around 500 students. At Freeport High School, all students are required to pass one full year of a Fine Arts course in order to meet graduation requirements. Due to block scheduling,
classes meet for seventy-two minutes every other day. For the past twelve years the school has increasingly focused on integrating technology into teaching and learning.

The high school is one of sixty-two schools participating in the MLTI. This program was one of the first statewide programs for equipping seventh to twelfth grade students, and their teachers, with technology. Starting in 2002, sixty-two Maine public schools were leased Apple laptops for every single student and teacher. In 2013, the Maine governor changed the program and the technology devices. After months of debate, Freeport High School chose to switch from laptops to iPads. The change from the familiar laptops to iPads created major discrepancies in teacher instructional strategies and student understanding. Teachers were not given professional development time to learn how to use the new iPads and students were given the devices without any educational framework.

**Data Collection**

Data on technology use at Freeport High School was collected for this study through surveys with students, teachers, and technology staff (see Appendices A1-A3 for complete survey questions). Data was collected over a period of four weeks. Forty-five students enrolled in the researcher’s studio art courses were surveyed about their personal and educational use of technology. Their responses then led to eleven specific teachers being surveyed about their professional use of technology. A third survey was sent to the technology support department in order to gather background information about the MLTI program as well as different viewpoints on technology. Additional data was gathered via an online investigation of teacher websites. The researcher viewed the eleven teacher websites that student surveys mentioned as being helpful to

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3 https://www.maine.gov/mlti/
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Classroom implementation was the culminating phase of the study and included a unit plan integrating technology (see Appendix A4 for unit plan).

Student Survey

While a lot of financial resources were annually expended on technology at Freeport High School, the researcher had observed a general lack of educational technology buy in from the students. For this study, all students enrolled in the researcher’s studio art courses were asked what they found most helpful in regards to technology at Freeport High School. Many students have grown up surrounded by technology and are used to having it readily available for their personal needs. Thus, the researcher wanted to include the students on her journey to improve technology integration in her classroom. Bitner and Bitner (2002) write:

One valuable resource that is often overlooked and underused is student help. This resource cannot be overemphasized. Involving students in this process fosters individual self-esteem, self-confidence, interest in the learning environment, and a sense of ownership in their own education. (p. 98)

Prior to e-mailing student surveys, class time was used to discuss the background of the research project. The survey consisted of questions asking the students to provide background information on their experiences with technology, technology resources they have at their homes, their use of technology, teacher integration, and any teacher websites they have found helpful to their learning and understanding (see Appendix A1 for student survey questions).

Teacher Survey

Eleven teachers recommended by students as successfully integrating technology into their classes were e-mailed a teacher-centered survey (see Appendix A2 for teacher survey questions). Schrum (1999) writes, “It is important to look carefully at how teachers learn about
using technology, for they are quite clearly the key to transforming teaching and learning” (p. 84). The researcher provided background information on the study and directly stated that the teachers asked to participate in the study had been selected by their students as having helpful teacher websites. Teachers were asked a series of questions focusing on technology integration, technology support, technology professional development, student technology requirements, and personal philosophy of technology in education.

**Technology Department Survey**

Freeport High School has three full-time staff members dedicated to technology support and integration. The researcher e-mailed the technology department survey questions focused on providing background information on the MLTI program (see Appendix A3 for technology department survey questions). Survey questions also asked about Freeport High School’s financial cost to purchase and maintain technological resources in addition to technology implementation, development, and support.

**Online Investigation of Teacher Websites**

Eleven teacher websites were investigated as part of the data collection for this study. The digital exploration was utilized as a method for the researcher to see examples of how other Freeport High School teachers use their websites as a way to enhance student learning and understanding.\(^4\)

**Classroom Implementation**

Classroom implementation took place in the researcher’s studio art classrooms at Freeport High School. The researcher chose to focus her classroom implementation on her upper-level studio art students. Meaning, all twenty-six students included in the classroom

\(^4\) http://fhs.rsu5.org/fhsstaff
implementation portion had previously passed a yearlong Foundations of Art course with an A or a B grade. Thus, all student participants who took part in the unit plan (see Appendix A4 for the unit plan) were students who had a strong interest in art and chose to take the course as an additional elective (their one year fine art credit was already fulfilled). When introducing a new project, the researcher presented the additional requirements of the digital portfolio reflection to all of her students while utilizing her teacher’s website and technological resources (see Appendices A5-A11 for resources created for the unit plan).

The unit plan consisted of four lessons, which lasted a total of two-weeks. The unit required students to digitally document their artwork. Students photographed projects, edited the images by cropping and adjusting the lighting, and then uploaded the images onto their digital portfolio websites. In addition to demonstrating the entire video creation process on her iPad, the researcher provided printed directions to all of the students detailing the portfolio expectations, requirements, and grading rubric. The teacher exemplar and all other documentation were linked to the teacher’s webpage.\(^5\) By digitizing the student portfolios, students, parents, administrators, and teachers were able to see exactly what the art students had been working on and what the students had, or had not, learned. This process required students to become accountable and take responsibility for their learning. The student digital portfolios were also used as a form of journaling requiring students to write about their inspiration, process, and product. In addition, all students involved in the study were required to create a quick response (QR) code and nameplate, linked to their specific digital assignment page, to be displayed in the school gallery next to their finished project.

\(^5\) https://sites.google.com/a/rsu5.org/ms-medsker-s-magic/student-digital-portfolios
Survey data, online investigations of teacher websites, student digital portfolios, and the researcher’s memos were all analyzed in order to find instructional strategies utilizing iPads and websites to enhance student learning and understanding. Data was analyzed by using analytic induction and constant comparison methods and was compiled into charts, graphs, and tables in order to find connections. Analytic induction was used in order to find similarities within the data and constant comparison methods were used in order to critically examine and draw meaning from the collected data.

Summary

This study incorporated many technology methods while investigating ways technology can be utilized in order to support student learning and understanding. Student, teacher, and technology department surveys collected data on educational use of technology as well as MLTI background information. While all teachers at Freeport High School are mandated to have teacher websites, website complexity and helpfulness varies drastically. The online investigation collected data on specific characteristics of surveyed teacher websites. Required student use of technology also varies and this study investigated ways students could use technology to support their learning and showcase their understanding. The classroom implementation portion of this study included a unit plan requiring students to use technology to reflect on their artwork. The results of the study are discussed in chapter four.
CHAPTER FOUR: RESULTS OF THE STUDY

This study focused on investigating technology integration at Freeport High School, in Maine, using data collected through student, teacher, and technology department surveys, teacher website investigations, and classroom implementation. Surveys were used to gather information from forty-five students, eleven teachers, and two technology support staff in regards to the focusing on the Maine Learning Technology Initiative (MLTI) background information, technology use in education, and helpful ways teachers can utilize technology in their classes and on their websites. The researcher conducted an investigation of the eleven websites in order to gather data on how different teachers structured their webpages along with what resources they provided their students, and the public, on their webpages. This study culminated with a classroom implementation requiring twenty-six students to create digital portfolios documenting their artistic process and final products. When completed, the twenty-six students created quick response (QR) code labels to display next to their artwork, which when scanned, opened the students’ specific assignment portfolio reflection page. This chapter reviews the significance of the study, bias and validity, and presents the analysis of data and results of the study.

Significance of the Study

This study promoted 21st century learning skills and aligned the art education curriculum with Freeport High School’s mission statement and the Maine Learning Results in regards to using technology and reflecting on learning. Integrative and collaborative technology was one of the core instructional goals for the state of Maine and Freeport High School. In addition to improving her own website according to student survey data, the researcher integrated video reflections into her curriculum requiring students to document their artistic process and reflect on their artwork.
The findings of this study were consistent with prior knowledge in addition to having
discovery significance as well. While there have been multiple prior studies focused on
technology integration in art education, this study delved deeper into the preferences of students
and teachers in addition to a classroom implementation project that had students digitally reflect
on their artistic process. The researcher could not find many other high schools that required art
students to have digital portfolios let alone narrated video reflections. The study suggests a
variety of ways teachers can improve their practice specifically in regards to creating teacher
websites. The study also provides an avenue for art educators to improve their understanding of
student work by having students photograph the stages of their artwork and reflect on it orally as
well as in a written format. A variety of learning styles and instructional practices are supported
by this study including using student examples, teacher models, written directions, and visuals.
Many teachers struggle when faced with a mandated technology use policy from their
administration, however, this study supports students creating artwork with their hands in a
traditional way while using technology in a way that helps teachers with formative and
summative assessments through digital portfolios.

**Bias and Validity**

This study used three forms of data collection in order to triangulate information and
remain objective. Students, teachers, and technology support staff completed the surveys in order
to gather a variety of feedback and differing opinions. The researcher investigated a variety of
teacher websites in order to see what information and strategies teachers were making accessible
to their students, and the public, on their professional webpages. Classroom implementation
utilized the data collected from students and teachers when revising the researcher’s webpage
and integrating technology into the studio art curriculum through digital portfolios, video
USING TEACHER WEBSITES AND STUDENT DIGITAL PORTFOLIOS TO ENHANCE STUDENT LEARNING

Reflections, and QR code labels. Throughout the classroom implementation process, the researcher regularly checked in with her students and worked with many students one-on-one in order to check for understanding and problem-solve technical issues. After creating their project video reflections, students completed a quick survey asking for their reflections on the process and project objectives. Student feedback was analyzed in order to understand whether or not the teacher website and student digital portfolio websites were successful in enhancing student learning and understanding.

Triangulation was used in order to collect the strongest data regarding technology integration. The digital surveys, teacher website investigations, and classroom implementation provided varying sources of information and created a check and balance system when analyzing the data. For example, while many (32 out of 45) students stated that website calendars with deadlines are very helpful to student learning, only three out of the eleven teachers whose websites were investigated actually posted digital calendars on their teacher websites.

In order for this study to be valid, the researcher identified multiple validity threats and tried to maintain an even playing field for the students. The student survey asked students for background information about technology resources they had accessible at home as well as their overall comfort level with iPads. While some students did not have computer or wireless access outside of school, all students had their school-issued iPads and wireless access while in the researcher’s classroom. Throughout this study, some students struggled with specific technology issues resulting in them seeking help from the technology support staff. Because the students were from a variety of different grade levels and had different skill levels, some students had a lot more experience with technology in general than other students. Some of the included student participants were high honors students while others struggled to pass many of their classes. The
researcher tried to maintain honest and open relationships with her students in order to help them feel comfortable providing constructive feedback about technology integration. The digital portfolio video reflections required students to be open and honest when discussing and sharing their artistic process, thus, the researcher tried to be empathetic to the students’ feelings.

**Analysis of the Data**

**Student Survey Data**

Freeport High School uses Google as a basic platform for digital communication so all of the survey data was gathered using Google forms (see Appendix A1 for the full list of survey questions). The Google form survey data was coded and categorized in order to find teachers at Freeport High School whom students considered as having exemplary websites. Technology instructional practices that students listed as helpful to their learning were categorized and charted. Throughout this research process the researcher regularly tried to use student feedback in order to improve her technology instructional practices and teacher website. Additional technology requirements for students were integrated in order for the students to document their artistic learning and process.

**Teacher Survey Data**

After collecting data from student surveys, eleven teachers were selected to participate in this study (see Appendix A2 for a full list of survey questions). The eleven teachers were e-mailed a Google form survey asking for feedback on their use of technology integration and opinions regarding technology support at Freeport High School. The Google form survey data was coded, categorized, and graphed in order to make connections.
Technology Department Survey Data

A Google form survey focusing on finding out the background information on the MLTI program was e-mailed to the three full-time technology department staff members (see Appendix A3 for technology department survey questions). Survey questions also asked about Freeport High School’s financial cost to purchase and maintain technological resources in addition to technology implementation, development, and support. Two members responded to the digital survey. The two survey responses were categorized.

Teacher Website Investigation

After the students completed their technology survey, the researcher investigated the websites of the eleven specific teachers recommended by students. The researcher charted the information accessible on the teacher websites using the nine categories students listed in the student survey as being helpful to student learning. The nine specific categories included: class notes, video resources, assignment rubrics, assignment descriptions, teacher exemplars, examples of student work, links to supplemental resources, calendar with deadlines, and list of daily assignments and activities.

Classroom Implementation

For the classroom implementation the researcher used student survey and teacher website investigation data to revise her own website and integrate technology into her curriculum with the use of student video reflections and digital portfolios. The lesson ended with students creating QR code labels to display next to their finished works of art. When scanned with a smart device the QR codes take the viewer directly to the student’s digital portfolio and video reflection. After classroom implementation, the students’ digital portfolios and student feedback were analyzed.
Results of the Study

Student Survey Results. Forty-five students enrolled in the researcher’s studio art courses participated in the technology digital survey. The students ranged from ninth graders to twelfth graders, however, the majority of students surveyed were in the ninth grade (17). Most of the students (35) have been a part of the Maine Learning Technology Initiative (MLTI) program since the seventh grade. The ten other students were either foreign exchange students or transfer students who started MLTI when they entered Freeport High School. See Figures 4.1 and 4.2 for graphed results.

![Figure 4.1. Graph of the grade levels of surveyed students.](image)

![Figure 4.2. Graph of surveyed students participation history with the MLTI program.](image)

Technology resources. Survey results indicate that almost all of the students had access to wireless internet at their homes (43) and many of them had desktop or laptop computers accessible at their homes as well (40). More than half of the students also owned smart phones and quite a few also had personal iPads in addition to their school-issued iPads. While the MLTI program was created with the intention of providing all students with the same technology devices, it seems as if many of the students know have duplicate forms of technological devices and applications. See Figure 4.3 for graphed results.

![Figure 4.3. Graph of technology resources.](image)
USING TEACHER WEBSITES AND STUDENT DIGITAL PORTFOLIOS TO ENHANCE STUDENT LEARNING

Figure 4.3. Graph of survey data indicating technology resources available at students’ homes, in addition to school-issued iPads.

**Student use of technology.** For iPad usage at home, students stated that they used their iPads the most for homework purposes (33) and less than half of the students reported using their iPad mostly for gaming (18) and social media (15) at home. In the school environment, students stated that they mostly used their iPads for writing (34) and researching (33) for their classes. Viewing teacher websites (22) and accessing student grades via PowerSchool (21) were also high on the student list. See Figures 4.4 and 4.5 for graphed results of student technology use.

Figure 4.4. Graph of survey data of student use of MLTI iPads while at their homes.
Technology in education. The majority of students listed using iPads for educational reasons as challenging (39). See Figure 4.6 for graphed results.

Figure 4.5. Graph of survey data of student use of MLTI iPads while at school.

Figure 4.6. Graph of student opinions on whether or not they feel using an iPad in education is challenging.

When comparing the MLTI iPads to MLTI laptops, most students felt that the laptops were more useful for school purposes (39). While students listed a full range of challenges with the iPads, the greatest issues were with typing larger documents (24) and multitasking (8). While students found using iPads more difficult than laptops, they still found the iPads beneficial for educational purposes (38), specifically noting their portability and applications as helpful. See Figures 4.7, 4.8, and 4.9 for student survey results on using iPads for educational purposes.
USING TEACHER WEBSITES AND STUDENT DIGITAL PORTFOLIOS TO ENHANCE STUDENT LEARNING

Figure 4.6. Graph of greatest challenges students face when using iPads for educational purposes.

Figure 4.7. Graph of student preferences comparing the ‘old’ MLTI laptop devices to the recently issued MLTI iPad devices.

Figure 4.8. Graph of students’ opinions on whether or not using iPads for educational purposes is beneficial.
Teacher integration and websites. Of all the students surveyed, thirty-three stated that they prefer teachers and classes where technology is integrated regularly. See Figure 4.10 for graphed results.

Students had many suggestions for ways teachers can incorporate technology into their classes. With the iPads specifically, students suggested teachers use Google Drive for collecting documents. Students also recommended that teachers assign homework on the iPads instead of paper in addition to requiring students to create more digital projects and presentations. Some students felt that teachers need to explore more apps and present those to the students so that the students would get excited about the transition to iPads. Students also suggested that teachers e-mail assignments to students and put homework on teacher websites.

When asked about teacher websites and helpful features, students stated that the most
helpful features are calendars with deadlines (32), assignment descriptions (30), links to supplemental resources (21), and class notes (20). See Figure 4.11 for graphed results.

![Graph of student survey feedback indicating the most helpful features on teacher webpages.](image)

When asked how often they access the researcher’s website, eighteen students responded daily, twenty students stated one-to-two times per week, and seven students said less than once a week. See Figure 4.12 for graphed results.

![Graph of student responses when asked how often they checked the researcher’s class website.](image)

Students were asked which teacher websites they check regularly and their responses named twelve teachers. The twelve teachers covered all content areas except for physical education and health. The teachers ranged in age, educational experience, and grades taught.

Three English teachers, three science teachers, two social studies teachers, two foreign language teachers, one math, and one art teacher (the researcher) were listed by the students. For the purpose of this study, the researcher did not include her own website in the online investigation, dropping the number of teachers surveyed and website investigations down to eleven. See Table
4.1 for student recommendations of teachers with helpful websites.

### Table 4.1

*Student Recommendations of FHS Teachers with Helpful Webpages*

<table>
<thead>
<tr>
<th>Student Responses</th>
<th>Teacher’s Website Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Blier (English)</td>
<td><a href="https://sites.google.com/a/rsu5.org/lisa-blier/">https://sites.google.com/a/rsu5.org/lisa-blier/</a></td>
</tr>
<tr>
<td>*Girardin (Science)</td>
<td><a href="https://sites.google.com/a/rsu5.org/mszachko/">https://sites.google.com/a/rsu5.org/mszachko/</a></td>
</tr>
<tr>
<td>*Grivois (Social Studies)</td>
<td><a href="https://sites.google.com/a/rsu5.org/mrgriv/">https://sites.google.com/a/rsu5.org/mrgriv/</a></td>
</tr>
<tr>
<td>*Hunter (Science)</td>
<td><a href="https://sites.google.com/a/rsu5.org/amyhunter/">https://sites.google.com/a/rsu5.org/amyhunter/</a></td>
</tr>
<tr>
<td>*Kurry (Science)</td>
<td><a href="https://sites.google.com/a/rsu5.org/mrs-kurry/home">https://sites.google.com/a/rsu5.org/mrs-kurry/home</a></td>
</tr>
<tr>
<td>*Leavitt (English)</td>
<td><a href="https://sites.google.com/a/rsu5.org/ms-leavitt/home">https://sites.google.com/a/rsu5.org/ms-leavitt/home</a></td>
</tr>
<tr>
<td>*Massey (Social Studies)</td>
<td><a href="https://sites.google.com/a/rsu5.org/karenmassey/">https://sites.google.com/a/rsu5.org/karenmassey/</a></td>
</tr>
<tr>
<td>*Medsker-Mehalic (Art)</td>
<td><a href="https://sites.google.com/a/rsu5.org/ms-medsker-s-magic/home">https://sites.google.com/a/rsu5.org/ms-medsker-s-magic/home</a></td>
</tr>
<tr>
<td>*Nolan (English)</td>
<td><a href="https://sites.google.com/a/rsu5.org/nolan/">https://sites.google.com/a/rsu5.org/nolan/</a></td>
</tr>
<tr>
<td>*Soule (Math)</td>
<td><a href="https://sites.google.com/a/rsu5.org/maddie-soule-9-12-mathematics/">https://sites.google.com/a/rsu5.org/maddie-soule-9-12-mathematics/</a></td>
</tr>
<tr>
<td>*Varela (Foreign Language)</td>
<td><a href="https://sites.google.com/a/rsu5.org/cathy-varela/">https://sites.google.com/a/rsu5.org/cathy-varela/</a></td>
</tr>
<tr>
<td>*Whitmore (Foreign Language)</td>
<td><a href="https://sites.google.com/a/rsu5.org/whitmored/">https://sites.google.com/a/rsu5.org/whitmored/</a></td>
</tr>
</tbody>
</table>

*Note.* All teachers except for the researcher (Medsker-Mehalic) completed the researcher’s teacher survey. All of the teacher webpages are publically accessible on the internet.

### Teacher Survey Results

**Technology integration.** Out of the eleven teachers surveyed, most stated that they integrate technology into their teaching in a variety of ways including: e-mail communication (11), digital projects (11), teacher website (11), LCD projections of course materials (10), and supplemental videos (9). Only one teacher listed using an interactive smartboard. See Figure 4.13 for graphed results.
When asked how their students use technology in their courses, all teachers stated that their students create digital projects, research online, and write. Three teachers stated that they have students document their work digitally in portfolios or folders. See Figure 4.14 for graphed results.

The survey question that focused on frustrating aspects of technology garnished a variety of answers. However, many (8) teachers wrote that they were most frustrated by administrations mandated use policy. Seven teachers listed being frustrated when the technology fails, and six teachers listed having problems with distracted students. Five teachers listed being frustrated
with changing technology devices without training and not having enough time to research apps and online resources. See Figure 4.15 for graphed results.

When asked about the positive impacts of technology, many (6) teachers listed improved organization, greater accessibility (4), less paper waste (4), connecting to the global world (4), and visual simulations to help explain difficult concepts (4). Teachers also wrote that technology integration has made their classes more engaging in addition to holding teachers more accountable because so much information is now public and digital. See Figure 4.16 for graphed results.
The final teacher survey question was open-ended asking teachers if they would like to offer anything else about technology integration. Teachers responded with stating that technology is just a tool and that traditional methods of teaching can still work best in some situations. In addition, one teacher wrote that students are losing some traditional skills like creating graphs with pen and paper because they are used to computers doing everything for them.

**Technology support.** Responding to a question about technology support and
USING TEACHER WEBSITES AND STUDENT DIGITAL PORTFOLIOS TO ENHANCE STUDENT LEARNING

development, seven teachers stated that they have learned the most by experimenting with a
variety of applications. Six teachers stated that they have had the most success through
independent research and one-on-one time with the Freeport technology integrator. See Figure
4.17 for graphed results.

![Graphed results of what technology support and development teachers find most helpful.](image)

**Technology Department Survey Results**

**Financial information.** The survey sent to the technology department asked open-ended
questions resulting in two staff members sending responses that dealt mostly with the financial
and business side of MLTI. The survey responses stated that the annual cost of FHS one-to-one
device to student program annually costs between $125,000 and $130,000. This covers the cost
of the iPads, apps, wireless, and some professional development offered by Apple and the
Department of Education. That cost does not include local costs for increased professional
development time or staffing. When asked where the funding comes from, the responses stated
that at Freeport High School MLTI is funded locally by taxpayers. However, in the seventh and
eighth grades, MLTI is funded by the Maine Department of Education. Survey responses stated
that the equipment is maintained through the MLTI program and that every summer students
return their leased devices and the technology department takes a physical inventory and inspects
each device.
Implementation. Asked what they think is the most positive aspect of the MLTI program, the responses included equity for students in towns all over the state of Maine. The MLTI program creates a common environment by leasing each student the same equipment.

Development and support. Commenting on the weakest aspect of the MLT program, survey responses noted a lack of professional development and support beyond the hardware. One response stated that school leaders need to have a better sense of how to bring instruction into this century and to be able to articulate that vision to their teachers and communities.

Teacher Website Investigation Results

For the online teacher website investigation, the researcher charted which website features each student-recommended teacher utilized on their professional class webpage. Nine different features were looked for: class notes, video resources, assignment rubrics, assignment descriptions, teacher exemplars, examples of student work, links to supplemental resources, calendar with deadlines, and a list of daily assignments and activities. Eight features were all specifically mentioned from the student survey data as being helpful to student learning and the researcher ended up adding one additional category (list of daily assignments and activities) because she felt it differed from a calendar, however, was found on many of the teacher websites. All of the teacher websites are publically accessible on the internet and linked to the main school homepage. Of the eleven websites investigated, nine teachers posted assignment descriptions and links to supplemental resources on their webpages. Eight listed the daily activities and assignments while three teachers had their assignments and activities posted in a calendar format. Five teachers posted their grading rubrics. See Table 4.2 and Figure 4.18 for charted and graphed investigation results.
### Table 4.2

**Teacher Website Investigation Results**

<table>
<thead>
<tr>
<th>Class Notes</th>
<th>Video Resources</th>
<th>Assignment Rubrics</th>
<th>Assignment Descriptions</th>
<th>Teacher Exemplars</th>
<th>Examples of Student Work</th>
<th>Links to Supplemental Resources</th>
<th>Calendar with Deadlines</th>
<th>List of Daily Assignments and Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Blier</strong> (English)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>x</td>
</tr>
<tr>
<td><strong>Girardin</strong> (Science)</td>
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<td>x</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
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<tr>
<td><strong>Grivois</strong> (Social Studies)</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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<tr>
<td><strong>Kerry</strong> (Science)</td>
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<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td><strong>Leavitt</strong> (English)</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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<tr>
<td><strong>Massey</strong> (Social Studies)</td>
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<td>-</td>
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<td><strong>Nolan</strong> (English)</td>
<td>-</td>
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<tr>
<td><strong>Soule</strong> (Math)</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>-</td>
<td>x</td>
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<td>-</td>
</tr>
<tr>
<td><strong>Varela</strong> (Foreign Language)</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>x</td>
<td>-</td>
<td>x</td>
</tr>
<tr>
<td><strong>Whitmore</strong> (Foreign Language)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

*Note.* In addition to charting specific characteristics of teacher websites, the researcher noted additional helpful and inspiration information. Three teachers incorporated inspirational quotes onto their websites. All eleven teachers had webpages broken into class sections. Two teachers used color-coding as a method of organization and emphasis. One English teacher had links to student blogs and writing samples. One English teacher had a link to the current books she was reading. One Foreign Language teacher had linked to personalized Quizlets and required students to take the quizzes and e-mail her a screenshot of their final score (once they received an 85% or higher).

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**Figure 4.18.** Graphed results from teacher website investigation indicating how many teachers used specific resources and structures with their websites.
In addition to charting website resources, the researcher found a few of the teacher websites exceptional. For example, one of the English teachers had links to her students’ digital blogs and writing samples. That same teacher had a digital bookshelf showing the book covers of the books she had recently read and was currently reading. See Figure 4.19 for an image of the English teacher’s webpage with her current reads listed. One of the foreign language teachers had links to personalized Quizlets which she had created and required her students to take the online quizzes and e-mail her a screenshot of their final quiz score once they received an 85% or higher. In addition to educational and instructional postings, many teachers included inspirational quotes, funny comics, and personalized photos on their websites.

![Figure 4.19. Screenshot of an English teacher’s webpage showcasing which books she was reading along with a link to her students’ journalism blog.](image)

**Classroom Implementation Results**

**Teacher website revision.** The classroom implementation started with the researcher
using data collected from the student surveys and teacher website investigations to revise her own teacher website. This included posting many supplemental links to contemporary artist’s blogs, portfolios, and Art21 videos corresponding to classroom lesson plans. An individual webpage was created for each class along with the project and participation rubrics. In response to students asking to see examples of the researcher’s personal artwork, a portfolio page was also created in order for the students to see examples of artwork the teacher had recently created.

Google calendars were created for each of the six classes listing assignment deadlines. The calendars were then posted them into each of the individual class webpages. Assignment rubrics were uploaded into Google Drive and posted into the corresponding lessons. If accessible, past student examples were also uploaded next to the corresponding lessons. See Figure 4.20 for an image of the researcher’s website home page.

Figure 4.20. Screenshot of the researcher’s home webpage showing color-coding and links to classes organized into separate sections, project and participation rubrics, her personal art portfolio, and supplemental hyperlinks.

6 https://sites.google.com/a/rsu5.org/ms-medsker-s-magic/home
**Student digital portfolios.** For the digital portfolio reflections, the researcher created an exemplar using her school-issued iPad mini and the application Explain Everything. The video example was linked to the teacher’s webpage as well as projected in the classes during the lesson on creating video narratives. In addition to the video example, the researcher created step-by-step visual directions. Those directions were also hyperlinked to her website and printed for the students. After the researcher presented the video reflection lesson, the researcher worked with students on a one-to-one basis who needed extra help with the technology. Because the video reflections had to document the students’ artistic process, the students were regularly reminded to photograph their artwork, using their iPads, in order to show the evolution and stages in their videos. After the students completed their artwork and their video reflections, the teacher demonstrated how to upload the videos onto their digital portfolio websites. The steps for this process were also linked to the teacher’s webpage and printed for the students to access. See Figure 4.21 for an image of the student digital portfolio link and direction webpage.

*Figure 4.21.* Screenshot of the researcher’s webpage showing student digital portfolio links and assignment direction links.
Because this study required students to document their artistic process using technology in a new way, some students had difficulty following the assignment requirements. Some of the students did not see the value in photographing the evolution of their artwork and explaining their inspiration and process. When asked to reflect on the use of digital portfolios, one student wrote:

In my opinion, I don’t really see much importance in them. Maybe that’s why my grade is so low. We have critiques in class, and only the teacher is viewing our website so I don’t really see why we need them all that much. (Student #25, Survey Response, 2014)

That student clearly missed the point of being able to explain her artistic process. In addition, the student digital portfolios are actually public and a wide variety of people access them including parents, guidance counselors, students, and other teachers (parent permission to publish on the internet was obtained for ethical reasons). While the digital portfolio requirements created extra work for the students, and not all students enjoyed the process, the point of the assignment was to get students to be able to articulate their vision and artistic reasoning.

For the purpose of this study, the researcher looked at the digital portfolio pages of twenty-six students enrolled in her upper-level studio art courses (2D Design, 3D Design, Advanced Studio, and AP Studio). Many of the students’ video reflections turned out really well and communicated their reasoning behind their artwork much better than what they had communicated during class time. Only a few students chose not to complete the video narrative assignment and a couple did not hyperlink it correctly to their assignment page. See Table 4.3 for charted results of the student digital portfolio page data.
### Charted Results from the Student Digital Portfolio Page Assignment

<table>
<thead>
<tr>
<th>Key</th>
<th>High Quality Image of Final Artwork</th>
<th>Written Reflection</th>
<th>Video Narrative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>*3 well-constructed paragraphs -1 paragraph explaining <strong>WHAT</strong> the student-artist did (the assignment description) -1 paragraph explaining <strong>HOW</strong> the student-artist ‘did’ it (the process) -1 paragraph explaining <strong>WHY</strong> the student-artist ‘did’ it (the reasoning)</td>
<td>*Appropriate application used *Clear images including: in-process images, thumbnail sketches, inspiration artworks, and final product *Voice over dialogue *Hyperlinked on portfolio page</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student #1: 2D Hands</th>
<th>Student with IEP- Has not completed digital portfolio page</th>
<th>Student with IEP- Has not completed digital portfolio page</th>
<th>Student with IEP- Has not completed digital portfolio page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student #2: 2D Hands</td>
<td>No Image Included</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Student #3: 2D Hands</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Student #4: 2D Hands</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Student #5: 2D Hands</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Student #6: 2D Hands</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Student #7: 2D Hands</td>
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<td>+</td>
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<tr>
<td>Student #8: 2D Hands</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Student #9: 2D Hands</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Student #10: 2D Hands</td>
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<td>+</td>
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<tr>
<td>Student #11: 2D Hands</td>
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<tr>
<td>Student #12: 2D Hands</td>
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<tr>
<td>Student #13: 2D Hands</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Student #14: 3D Hands</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Student #15: 3D Hands</td>
<td>+</td>
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<td>Student #16: 3D Hands</td>
<td>+</td>
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<tr>
<td>Student #17: 3D Hands</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Student #18: 3D Hands</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Student #19: AP Paradox</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Student #20: AP Paradox</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Student #21: AP Paradox</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Student #22: Adv Paradox</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Student #23: Adv Paradox</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Student #24: Adv Paradox</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Student #25: Adv Paradox</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Student #26: Adv Paradox</td>
<td>+</td>
<td>-</td>
<td>No video narrative</td>
</tr>
</tbody>
</table>

*“+” indicates requirements were met *“-” indicates student did not meet requirements

*Student #7: 2D Hands - No video narrative
*Student #10: 2D Hands - No video narrative
*Student #25: Adv Paradox - No video narrative
*Student #26: Adv Paradox - No written reflection
*Student #14: 3D Hands - included link but did not create hyperlink
*Student #9: 2D Hands - included link but did not create hyperlink
The video and written reflection provided students with a different platform for explaining and defending their artwork. This process was especially helpful for the generally quiet students in class, one of which wrote:

I think the importance of portfolio reflections is so you can really think about what you did in the project. I think it really helps you improve because you look at your art and have to think about what you can improve and what you did to make it look the way it does. This helps you learn because next time you’re doing a project you can think back to what you learned from the other one. If you never reflect on what you did it would make it harder to learn. (Student #22, Survey Response, 2014)

See Figure 4.22 for an image of one student’s project page. For more examples of student digital portfolios and video reflections please visit, https://sites.google.com/a/rsu5.org/ms-medsker-smagic/student-digital-portfolios.

Figure 4.22. Screenshot of one student’s digital portfolio page.
QR code labels. At the end of the lesson, students were shown how to create free QR codes. Labels for each student’s artwork were created and included the student’s name, title of the artwork, QR code linked to their specific assignment webpage, and directions on how to scan the QR code with a smart phone/tablet. The student artwork and QR code labels were displayed in the school gallery and the public library (as part of a juried student exhibition). The labels provided viewers with an opportunity to learn more about the inspiration and process behind the individual works of art. In addition, it helped validate the art program and teacher’s assignments by having the students explain project requirements in their video and written reflections. See Figure 4.23 for images of the art exhibition with QR code labels.

Figure 4.23. Pictures from student art exhibition showing QR code labels placed next to each of the student works of art.
The results of this study indicate that many students and teachers do think that technology, when integrated well, can help support student learning and understanding. While comfort and experience levels differ for all students and teachers, a variety of instructional strategies and resources utilizing technology can make learning more accessible. Some strategies teachers can use when integrating technology are demonstration of the process and product in addition to written handouts and instructions. Teacher websites can include a variety of features to help students take responsibility for their learning. Student digital portfolios can be utilized to reflect student process and product. While one faces many obstacles when using technology, the additional resources and accessibility technology provides in education are extremely powerful. Ideally, institutions would sponsor and support professional development focused on technology integration, however, this study found that many teachers learn the most by experimenting with different applications and working one-on-one with technology integrators. Because learning about new devices and applications takes time, teachers must see the fit between their philosophies of teaching and learning and technology applications in order to integrate technology successfully. The final chapter further discusses the results and implications of this study.
Chapter Five: Discussion and Conclusion

This study investigated strategies in which art educators can integrate technology in such a way that supports and enhances student understanding and learning. Research questions focused on digital websites and student digital portfolios. The findings of this study increase and deepen understanding of technology integration in a studio art classroom by using data collected directly from the students and teachers required to use technology at Freeport High School in Freeport, Maine. Data collected from student surveys suggested a positive influence teacher websites can have on student learning and understanding. Students indicated that specific teacher website features such as assignment calendars and student examples supported their understanding of assignment requirements. The student digital portfolios created for this study helped the students accept responsibility for their learning. This chapter discusses the personal impact of the study, rationale for the unit plan, and recommendations for other teachers who are interested in integrating technology into their curriculum.

Discussion

Personal Impact of the Study

Like prior research studies, the researcher found that student and teacher comfort levels were directly related to how willing they were to experiment with and use technology (Gregory, 2009). For example, within this context of this study, the researcher found that while some students were tech-savvy and comfortable facing challenges, other students had a tendency to shutdown when obstacles arose. The researcher had to constantly reiterate that technology, like art education, provides students with creative problem solving situations. When one approach or application did not work well, the students and the teacher had to find other pathways to reach their goals.
USING TEACHER WEBSITES AND STUDENT DIGITAL PORTFOLIOS TO ENHANCE STUDENT LEARNING

Sullivan (1993) articulates that in order for sustained learning to take place, art students must reflect visually and verbally on their process. Therefore, in order for art educators to truly know the meaning behind a work of art, students must be able to share their personal reasoning and process. The digital portfolios also served as a method of communication and validation of the art program to the public.

Students wrote and spoke about their art projects thus providing evidence of their learning. The unit had students use their iPads as data collecting and sharing devices. By connecting student portfolios to the digital world, this study publicly shared student learning through websites accessible to the public including: parents, administrators, teachers, and other students. In addition to documenting their processes on their digital portfolios, all students created quick response (QR) codes linked to their digital artist statements. The QR codes were then displayed next to the actual student artwork in the school gallery spaces. These QR codes provided greater access to student learning to anyone in the school with a smart device with a scanner application.

The student websites and videos helped provide evidence of student learning and use of technology integration. Gregory (2009) writes:

We must empower learners, place them in charge of their own learning and allow them direct and frequent access to computer learning technologies. We must invent new student-centered approaches that use the power of new learning technologies that focus on collaborative learning, real world problem solving, and creative, critical thinking. (p. 47)

Like Gregory, the researcher believes in collaborative learning environments where the process of learning is constantly discussed and shared and the unit was created with that
There were small changes that the researcher would make in the future in regards to student digital portfolio reflections. For the written reflection portion, the students indicated that they did not like the way the reflections were broken into parts in the comments section of their webpages and would prefer to write the comments directly below their final product images. Also, as technology changes other video applications may work better than the Explain Everything application. Overall, however, the researcher really enjoyed reading and watching the student reflections and felt that the reflections helped supplement and support the student artwork.

The target of this study, Freeport High School, did have financial support allotted purely for technological purposes including a budget for material costs, a technology curriculum integrator, and two technology support personnel. However, the study found a general lack of full-faculty professional development time dedicated to learning about technology integration. Prior research suggests that in order for schools to fully integrate technology into their curriculum, there has to be a substantial amount of resources dedicated to the implementation (Bauer & Kenton, 2005). Schools, like Freeport High School, need to ensure that there is an adequate amount of professional development when requiring teachers to integrate new technology.

**Impact on Practice**

This study encouraged communication and collaboration with Freeport High School teachers and students in order to find ways to enhance iPad integration using teacher and student websites. Technology and the internet have extended classroom walls for students and teachers. While reflecting on the positive impact of digital communication, Akins, Check, and Riley (2004) write, “Traditional walls between student and teacher, artist and student, and artist and
Teachable moments were fluid and flexible rather than static” (p. 37). The researcher was able to break down her traditional classroom walls by creating and revising teacher and student websites. Her website served as a tool to expand student choices and resources, and student websites were used to create digital portfolios documenting student processes and reflections. The teacher used the data to improve her own webpage thus enhancing future communication and learning for her students. Technology was used as a way to engage students and positively influence their learning experiences, no matter what challenges arose.

In the midst of this study, there was a large snowstorm resulting in two consecutive snow days directly before a week of no school. The researcher also had to miss an additional day of school because of a family sickness. Students did not physically see the teacher for over a week and a half, however, the researcher intentionally left all deadlines on her class website as a way to see whether or not her students would stay on top of their assignments regardless of snow days and teacher absences. She was happily delighted when thirteen of her fifteen photography students returned to school after break completely caught up on all of their assignments, as if the snow days never happened. During this same time period, The New York Times published an article about high schools using the internet as a way to compensate for weather emergencies. “As classrooms become more electronically connected, public schools around the country are exploring whether they can use virtual learning as a practical solution to unpredictable weather, effectively transforming the traditional snow day into a day of instruction” (Baker, 2014, para. 3). Technology is opening educational doors that have been previously closed with limited access only during school hours.
USING TEACHER WEBSITES AND STUDENT DIGITAL PORTFOLIOS TO ENHANCE STUDENT LEARNING

This study also overlapped with the birth of the researcher’s second child. Digital technology and her teacher webpage provided an amazing resource of communication for the students, maternity sub, and the teacher. Curriculum was fluid on the teacher’s website and information, supplemental resources, and deadlines could be changed from anywhere with wireless internet. The student digital portfolios provided an easily accessible avenue for the researcher to stay current on her students’ artistic growth and assignments. In this case, digital technology provided a powerful source of communication when face-to-face interaction was not possible.

Implications for Further Research

If the researcher were to replicate this study in the future, she would give herself an entire year to fully document the data using pre and post-instructional assessments. While her personal opinion is that technology can be immensely beneficial to student learning in a studio art classroom, many art teachers feel otherwise. It would be very interesting to compare digital portfolios and reflections to hand-written reflections. In addition, the researcher would compare and contrast more students’ digital portfolio reflections and require her students to provide additional feedback and critique about the digital process.

Advice to Art Teachers

The researcher encourages all art teachers to investigate how they and their students can use technology for educational purposes. Technology provides opportunities for students to research further into a topic of their choice. In art education, if students want to dive deeper into a technical approach they can use Google or YouTube to research video directions and exemplars, helping to supplement teacher instruction and become accountable for their own learning. This study showed the success one can have after collecting data from students and
USING TEACHER WEBSITES AND STUDENT DIGITAL PORTFOLIOS TO ENHANCE STUDENT LEARNING

teachers. The researcher was able to improve her practice by reflecting on her own integration of technology in her studio art classrooms specifically in regards to websites and portfolios. Collected data encourages all teachers to improve their curriculum transparency by creating and maintaining helpful teacher websites. This study showed one way that iPads can help studio art students document their own learning through digital portfolio websites reflecting their artistic processes and final products.

Advice to the Field of Art Education

While technology integration is not flawless and many obstacles can arise while using it, it can be used as a way to enhance student learning and understanding. This study examined ways in which teachers can utilize teacher webpages in order to help students remain accountable of their learning in addition to providing resources for students to access more information from the global community. The field of art education can be promoted to the digital, global world through the use of teacher and student websites spotlighting curriculum and projects. This study promoted connecting to the digital world as a way to supplement and showcase knowledge and learning. Most people associated with the field of art education, including art museums and galleries, could benefit from integrating technology as a way to quickly share knowledge and showcase process and intent. This study provides an example of how digital learning and sharing communities can be created through websites and offers specific recommendations for technological integration.

Recommendation for Technology Support and Development

The data collected throughout this study provided honest and critical feedback from students and teachers in regards to technology integration. One student wrote, “teachers need to explore more apps and present those to the kids so [they] can get excited about the iPads.”
USING TEACHER WEBSITES AND STUDENT DIGITAL PORTFOLIOS TO ENHANCE STUDENT LEARNING

(Anonymous Student, Survey Data, 2014). This student’s opinion reflects a desire for more educational opportunities to use the iPads. However, the teachers reflected a need for more professional development, support, and time to learn about the new iPad devices. Clearly, the desire to learn is there from many students and teachers, however, the time required for teachers to learn about the new technology has not been successfully implemented, yet, at Freeport High School. The researcher proposes additional time for professional development and support focused on technology. The results of this research study will be shared with the Freeport faculty in hopes that some of the teachers will be more open to integrating technology into their teaching. A future study could focus on a greater pool of teachers including those who intentionally choose not to use technology for educational purposes.

While many teachers are already mandated to use technology in their classrooms, the success of the integration depends entirely on the overall motivation and personal philosophy of the educator. Schrum (1999) writes, “Teachers need compelling reasons to dramatically change their practice. If change is forced or mandated from administration, the result may be tenuous acceptance, without real change” (p. 85). It is the recommendation of the researcher that school districts dedicate ample amount of professional development time and support when integrating technology. Because technology is fluid and ever changing, it is important for administrators and teachers to stay current on technological resources and opportunities for technology integration into school curriculum. Additional studies could focus on investigating which methods of support and development are most beneficial for educators integrating technology into their curricula.
Recommendation for Future use of Technology

This study inspired the researcher to require digital project portfolio pages, including video reflections, for all future studio art project assignments. It is the recommendation of the researcher that all studio art teachers require their students to regularly reflect on their art assignments. Koroscik (1996) writes:

As computers become increasingly available in schools, art teachers find that they must accept responsibility for incorporating the use of computers in the art curriculum. It is no longer enough for art teachers to teach so their students will develop an awareness and appreciation of art. Teachers must further aim for their students to think critically about art and acquire deep (or higher-order) understandings and expertise. (p. 5)

In this case the researcher chose to use technology as a way to enhance traditional art-making processes. Reflections were digital in order to connect with the global world and for the students to share their processes and products with a greater audience, however, any art teacher could find multiple ways to incorporate technology including research projects, creating video directions, and critiquing artwork.

This study also inspired the researcher to use Google form templates for a variety of other assignments and assessments. Thankfully, there were very few technological glitches during this study. Another positive aspect was the result of saving countless reams of paper by requiring written work to be sent digitally. The researcher plans to continue this form of digital data collection in the future.

The resources accessible through the internet provide students with countless opportunities to be artistically inspired and connect with the global community. Strudler and Wetzel (1999) write, “For those students located in remote areas, the distance technologies...”
provided learning opportunities that would not otherwise be accessible” (p.78). Even though this study took place in a small town in Maine, the students were able to access digital portfolios of contemporary artists along with creating their own digital portfolios that were globally accessible. The researcher recommends that all teachers create teacher websites to make their teaching and student work accessible to the public. By networking and sharing lessons and products, teachers can learn from one another no matter where their geographical locations may be.

**Conclusion**

In conclusion, this study resulted in teacher and student websites that were created as frameworks for sharing knowledge, learning, and understanding. It supports the idea that technology, when utilized well, can support and supplement traditional educational methods. The researcher’s initial goals were reached and data collected from this study answered the original four research questions focusing on investigating how to use readily accessible technology as educational sharing devices in one high school studio art classroom. Arts integration was the lens used throughout the study and student learning was demonstrated with the use of technology integration with student-created digital portfolio websites.

This study researched the influence of technology, specifically iPads, on student learning in a high school studio art classroom. The researcher investigated how to implement current and new technology into her classroom through the use of her teacher website and student digital portfolios. Twenty-first century learning skills, with a focus on technology and collaboration, were focused on throughout this project. This study encourages art educators to incorporate technology into daily studio activities, namely, reflecting about art.
REFERENCES


BIBLIOGRAPHY


# Appendix A1

## Student Survey Questions

| Background Information | *What is your name?*  
*What grade are you in?*  
*How long have you been a part of the MLTI program?* |
|------------------------|-----------------------------------------------------|

| Technology Resources | *What technological resources do you have accessible at home (other than your school-issued iPad)?* (check all that apply)  
__Wireless Internet__  
__Personal iPad__  
__Scanner__  
__Desktop/Laptop Computer__  
__Electronic Reader__  
__Smart Phone__  
__Printer__ |

| Student Use of Technology | *How do you most often use your iPad at home?* (check all that apply)  
__Gaming__  
__Social Media__  
__Streaming Video__  
__Accessing PowerSchool__  
__Homework__  
__Accessing Teacher Websites__  
__Music/Photography__  
__Communication via e-mail/Facetime/Skype__ |

| *How do you most often use your iPad at school?* (check all that apply)  
__Gaming__  
__Social Media__  
__Streaming Video__  
__Researching for Classes__  
__Accessing PowerSchool__  
__Communication via e-mail/Facetime/Skype__  
__Accessing Teacher Websites__  
__Music/Photography__  
__Writing for Classes__ |

| Teacher Integration | *Do you find using an iPad for education purposes challenging?* (yes/no)  
-If yes, please list two challenges  
*Do you find using an iPad for educational purposes beneficial?* (yes/no)  
-If yes, please list two reasons |

| Teacher Websites | *Which teachers, and classes, are you expected to use technology for/during?* (list)  
*Compare having a school-issued laptop to a school-issued iPad, which do you think is most helpful for school purposes?* (choose one)  
__Laptop__  
__iPad__  
*What do you think are some helpful ways teachers can incorporate technology into their classes?* (list)  
*Which do you prefer: (choose one)  
__A teacher who regularly integrates technology into their curriculum__  
__A teacher who does not regularly integrate technology into their curriculum__ |

| Teacher Websites | *What features of your teachers’ websites make them helpful to your learning and understanding?* (check all that apply)  
__Calendar with deadlines__  
__Links to supplemental resources and websites__  
__Teacher exemplars__  
__Video Resources__  
__Assignment Descriptions__  
__Class notes__  
__Examples of student work__  
__Assignment Rubrics__ |

| Teacher Websites | *How often do you access the art teacher’s website?* (choose one)  
__Less than once a week__  
__1-2 times a week__  
__Daily__ |

| Teacher Websites | *Which teacher websites do you check regularly?* (list) |
Teacher Survey Questions

**Technology Integration**

*How do you integrate technology into your teaching?* (check all that apply)

- Student/Teacher e-mail communication
- Interactive Smartboard Lessons
- Online Research
- Student Digital Projects
- Google Forms
- Supplemental Videos
- LCD Projections of Course Material
- Assessing Student Work

*How do students use technology in your courses?* (check all that apply)

- Creating Digital Projects
- Online Research
- Studying
- Documenting Work
- Sharing information (Google docs/forms)

*How has technology impacted your teaching?* (please list)

*What is the most frustrating aspect of integrating technology into your classes?* (please list)

**Technology Support**

*What technology support and development have you accessed and found most helpful?* (check all that apply)

- MLTI web-based courses
- 1-on-1 time with Technology Integrator
- Independent Research
- Team Professional Development Time
- Outside of FHS technology focused course
## Appendix A3

### Technology Department Survey Questions

<table>
<thead>
<tr>
<th>Background Information</th>
<th><em>What is your name?</em></th>
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</table>
| **Financial Information** | *What is the annual cost of our 1-1 program?*  
*Where does our MLTI funding come from?*  
*How is the equipment maintained?* |
| **Implementation** | *What do you think is the most positive aspect of the MLTI program?*  
*What do you think is the most challenging aspect of the MLTI program?* |
| **Development & Support** | *What administrative support do you receive?*  
*How do you stay “current” with technology?* |
UNIT RATIONALE
We live in a visual world constantly surrounded by technology. In recent years, many schools have had to create new rules focusing on technology. Technology has altered the face of educational environments. This unit focuses on investigating ways in which iPads can help studio art students document their own learning by creating digital portfolio websites reflecting their artistic process and final products. Student websites are created as frameworks for sharing knowledge, learning, and understanding.

Sweeney (2010) writes:
It is the responsibility of art educators living within networks of digital visual culture to determine how best to personalize, generate, and participate- to take the relevant methods and materials and make them meaningful in an age of participatory media. It is a matter of identifying forms of interaction and examples of intersection that take place within the digital visual culture. (p.xi)

This unit has students explore different technology applications as a way to document their artistic process in addition to supplementing their traditionally created works of art. Specifically, students create digital portfolios, digital reflections including written and video narratives, and QR code labels to display next to their artwork. Students articulating and sharing their reasoning behind their artwork is a main goal of this unit.

TITLE: Integrating Technology-Digital Art Portfolios
This unit is intended for students to learn how to use specific iPad technology. Students are required to become accountable for their artistic process through digital documentation and reflection.

GOALS (based on the National Standards for Visual Art (9-12))
Students should understand…
Content Standard #1: How to apply media, techniques, and processes

Students should know…
Content Standard #6: How to make connections between visual arts and other disciplines
Students should be able to…
Content Standard #5: Reflect upon and assess the characteristics and merits of their work and the work of others

INSTRUCTIONAL CONCEPTS
While technology is changing the face of education and access to information, it is up to teachers to help students navigate the instantaneous information available on the internet. When writing on students utilizing technology in education, Koroscik (1996) asks, “How will our students make sense of all the information they will have at their disposal almost instantaneously through computer mediation?” (p. 7). This unit requires students to support traditional art making processes by integrating technology. McNiff and Whitehead (2009) write, “because you cannot directly monitor people’s thinking…you have to ask them to do it themselves, and make their data available to you” (p. 93). Many students struggle with explaining the inspiration and evolution behind their works of art. However, this unit is intended to be the start of a regular documentation and reflection process to be used with all class projects. Students will become accountable for their artwork in a way that requires them to present and reflect on their ideas and process in a written, visual, and oral format.

LESSONS

Lesson One- Creating Digital Portfolio Website.
This lesson is an introduction to digital portfolios. Students look at exemplars of contemporary artist’s digital portfolios. Artist’s process is discussed and students are told that they will need to start photographing the evolution of their art projects. Teacher demonstrates how to create a digital portfolio using Google Sites.

Lesson Two- Creating Artwork.
Students use traditional art-making processes to create a work of art. Additional time is provided for students to work on their projects during class studio time. Students are regularly reminded to photograph the stages of their work of art.

Lesson Three- Documenting Artwork Process.
A discussion around process, inspiration, and documentation takes place. Class watches The Box Trolls movie trailer (http://trailers.apple.com/trailers/focus_features/theboxtrolls/#videos-large) and Chuck Close interview video (https://www.youtube.com/watch?v=_e-p5M0vhZI) and reflects on how documenting process helps viewers understand artwork.
Lesson Four- Creating Digital Portfolio Project Page.
Teacher demonstrates how to create and upload a video narrative to a digital portfolio project page. Portfolio project page requirements are discussed. Teacher introduces quick response (QR) codes. Time is given for students to create QR code labels to display next to their artwork.

RESOURCES AND MATERIALS
- LCD Projector
- Apple TV
- iPad/Computer Dongle
- LCD Speakers
- Photocopier/Printer
- Scanner
- Desktop computers
- iPads
- iPad chargers
- Explain Everything iPad Application
- Google Drive Application
- Chrome Application
- Scan Application (for QR Codes)
- Digital Cameras
- Pushpins/Tape (for hanging artwork when photographing)
- Wireless Internet

EXEMPLARS
- Contemporary Artist’s Digital Portfolio Examples
  - Jeff Koons (http://www.jeffkoons.com)
  - Sally Mann (http://sallymann.com)
  - Damien Hirst (http://www.damienhirst.com)

- Process and Reflection Interviews
  - Art21 Artist Interviews (http://www.pbs.org/art21/artists)

TEACHER CREATED RESOURCES
- Creating a Digital Portfolio Website Written Directions (https://docs.google.com/file/d/0Bx_U0Z9nRL-rZFPtieHVnlIBrY2s/edit)
- Portfolio Exemplar- teacher created digital portfolio example (https://sites.google.com/a/rsu5.org/kimberly-medsker-mehalic/home)
- Creating a Video Narrative Reflection Written Directions and Teacher Example (https://docs.google.com/a/rsu5.org/file/d/0Bx_U0Z9nRL-rOE94dGpfWDBOdk0/edit)
- Video Exemplars- teacher created digital portfolio video reflection example (https://docs.google.com/file/d/0Bx_U0Z9nRL-rcmNSMEEdQVn4TmM/edit)
- Art Project Reflection Video Requirements and Helpful Hints (https://docs.google.com/file/d/0Bx_U0Z9nRL-rUVUtQTdjS2FmTFk/edit)
- Uploading Videos onto Student Digital Portfolio Written Directions (https://docs.google.com/file/d/0Bx_U0Z9nRL-rTU1rUW9Ccn0S5IE/edit)
- Parent Permission Slips- for linking student digital portfolios on teacher website

ASSESSMENTS
- Daily Participation Grades (Rubric) https://sites.google.com/a/rsu5.org/ms-medsker-s-magic/participation-rubric
USING TEACHER WEBSITES AND STUDENT DIGITAL PORTFOLIOS TO ENHANCE STUDENT LEARNING

*Artwork Project Grade (Rubric)  https://sites.google.com/a/rsu5.org/ms-medsker-s-magic/project-rubric
*Digital Portfolio Grade (Rubric)  https://docs.google.com/file/d/0Bx_U0Z9nRGL_rTU1rUW9Cno5SIE/edit
*Class Critique/Presentation

REFERENCES


Creating A Digital Portfolio

*If you already have created a portfolio page, you will just add to the preexisting one*

1. Open your rsu e-mail account (by logging onto an internet browser and typing in mail.hs.rsu5.org)
2. Go to the mobile site
3. Under “more” select “sites”
4. Select “create”
5. Do not change the template (it should stay as “blank template”)
6. Name your site: First Name Last Name. ex: Kimberly Medsker-Mehalic
7. Do not touch what automatically pops up as the “site location”
8. Choose a color theme (no graphic designs please- think colors only)
9. After you click on your chosen theme, click on “Create” (at the top)
10. You should then see your personal website. Select the little pen icon (edit feature) in the upper right and change where it states “Home” to “Digital Art Portfolio.” Click “save”
11. Click the little icon, next to the pen, that looks like a sheet of paper with a plus sign
12. Name this new page, “Foundations of Art.” Select put under “Home.” Then click “Create”
13. Click “Save”
14. Go to “More” (in the upper right corner), then “Sharing and Permissions”
15. Change where it says RSU#5 people can edit. Click “Change” and then choose “Public on the web.” Click “Save”
16. Now, invite medskerk@rsu5.org. Change “can edit” to “can view”
17. Click “Share and Save”
18. On the left hand side, click where it states “Digital Art Portfolio”
19. Click the Foundations of Art link (on the left)
20. Choose the editing icon (the little pen)
21. Click in the second box and then choose “Table” (from the top formatting palette). “Insert table.” Choose a 4x5 table.
22. SAVE
23. Check with teacher to see how you can start labeling your table (you will be inserting images of all of your projects into the table)
Digital Portfolio Assignment Rubric

Each studio project should have its own webpage listed on the student portfolio website

*Artists spend countless hours creating and it is important to reflect on your process and final product. Often one ends up respecting the work more when they understand the artist’s intention and process…

*In performance-based assessment for understanding, the tasks and performances should require reflection, self-adjustment, with reasoning or rationale made as evident as possible

<table>
<thead>
<tr>
<th>IMAGES</th>
<th>POINTS</th>
</tr>
</thead>
</table>
| *Clear image/s  
*Image/s cropped appropriately  
*Solid foreground and background  
*Good lighting  
*3D sculptures should have multiple images showing different vantage points  
*If multiple images are showcased, a table must be inserted to structure the layout | /5 |

<table>
<thead>
<tr>
<th>WRITTEN REFLECTION</th>
<th>POINTS</th>
</tr>
</thead>
</table>
| *3 well-constructed paragraphs  
-1 paragraph explaining **WHAT** the student-artist ‘did’ (the assignment description)  
-1 paragraph explaining **HOW** the student-artist ‘did’ it (the process)  
-1 paragraph explaining **WHY** the student-artist ‘did’ it (the reasoning)  
*Correct spelling/grammar  
*Written as ONE statement in the comments section underneath the image  
*Written as though the audience knows NOTHING about art (do not write the reflection for the teacher, write it for someone who does not know the assignment/process) | /5 |

<table>
<thead>
<tr>
<th>VIDEO REFLECTION</th>
<th>POINTS</th>
</tr>
</thead>
</table>
| *Appropriate application used  
*Clear images including: in-process images, thumbnail sketches, inspiration artworks, and final product  
*Voice over dialogue  
*Hyperlinked on portfolio page | /20 |

Questions to consider:  
- How does your work show how you have improved?  
- What was the most challenging and why?  
- What are you most proud of and why?  
- In what ways does your work illustrate your strengths and weaknesses as a learner?
Appendix A7

Art Project Reflective Video Requirements

Requirements

*Each student needs to create a VIDEO (using the Explain Everything application) presentation to help present and explain the reasoning and process of their project.

*For the Explain Everything video students should have ONLY the artist’s name, title, listed PLUS a LARGE image for each slide. Students SHOULD NOT have typed information on their slides (other than the titles of the artwork). Students need to narrate their slides (record their voices). Images should be large, centered, and CLEAR.

Each project reflection video should be saved separately and uploaded onto student’s digital portfolio

<table>
<thead>
<tr>
<th>VIDEO REFLECTION</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Appropriate application used</td>
<td>/20</td>
</tr>
<tr>
<td>*Clear images including: in-process images, thumbnail sketches, inspiration artworks, and final product</td>
<td></td>
</tr>
<tr>
<td>*Voice over dialogue</td>
<td></td>
</tr>
<tr>
<td>*Hyperlinked on portfolio page</td>
<td></td>
</tr>
</tbody>
</table>

Questions to consider:

- How does your work show how you have improved?
- What was your inspiration?
- What was the most challenging and why?
- What are you most proud of and why?
- In what ways does your work illustrate your strengths and weaknesses as a learner?
Appendix A8

General Tidbits about Explain Everything Application

Use to add slides
Use to add text
Use to add image
Use to delete images
Use to undo

Use to change slides + delete slides
Use to record voice over specific slides
Use to SAVE (save/overwrite project often)

Use to export video to Google Drive (under "More" must have previously downloaded Google Drive app). MAKE sure “Video File” (near the top of the screen) and “Google Drive” (near the bottom of the screen) are selected then choose “Export.” Name the file the name of your PROJECT.
Appendix A9

Uploading Images to Digital Portfolios using iPads

*Your images should already be saved in your CAMERA ROLL APPLICATION

**Step 1** - Open up your school e-mail by going to a WEB browser, like Safari, and typing in mail.hs.rsu5.org. Go to your Drive section. Then, on the very bottom of the screen, change the settings from Mobile to Desktop (this will make it look like it does using a computer + you will have more options).

**Step 2** - After you change to Desktop mode, a screen will pop up asking you to confirm the change. Select ‘Continue to desktop version.’

**Step 3** - Now, once you are in Drive, and it looks like the image below, choose the red ‘up’ arrow next to the red ‘create’ option.

**Step 4** - Select ‘Files’ and then select ‘Camera Roll.’
Step 5- Now, find the specific photo you would like to upload.

Step 6- Select the image you need (a blue check mark should show up on the image), and then select ‘Done.’

Step 7- A little box should pop up, list the image name and state ‘Uploaded.’

Step 8- Ok, now your image is officially saved in your Google Drive (yay), you now need to go to ‘More’ and choose ‘Sites.’
Step 9- Once your website opens, choose the ‘Edit’ feature.

Step 10- Figure out where you would like to place the image and place your cursor in that exact spot. Then, in the upper left corner choose ‘Insert.’

Step 11- Under ‘Insert’ choose ‘Drive’ (far right hand column). When you select ‘Drive’ you will have additional options to choose from. Choose ‘Image.’

Step 12- Your images that have been saved to your Google Drive should open. Select the specific image you need, make sure a little blue box outlines the image, a little check mark should also show up in the left corner of the image. Once image is selected, click ‘Select.’
Step 13- Your image should now show up on your webpage! Use the little editing panel that shows up directly below the image to **CHANGE the size** (S, M, or L). You can also **center** your image at this time.

**FINAL STEP-** SAVE your webpage changes (by selecting ‘Save’ in the upper right hand corner. Great job 😊
**Appendix A10**

How to Upload Movies from *Explain Everything* to Gmail Sites - Digital Portfolio using an iPad

*Medsker-Mehalic’s Step-by-Step Directions*

**Step 1** - Using the Explain Everything application, create your video reflection. Once finished, make sure to SAVE your project. When ready to export your finished movie, select the *little filmstrip-arrow* icon in the bottom right corner. For our purpose, you then **touch the ‘more’ option**.

**Step 2** - Now, choose the *Google Drive* option from the bottom. If you are not already logged into Google Drive, you will be prompted to do so at this time. (You must have the Google Drive application already downloaded onto your IPad). Ok. Make sure ‘Video File’ is selected, and then touch ‘Export.’
Step 3 - Ok. Now, close out of Explain Everything, and use Safari to log into your school e-mail using the WEB- mail.hs.rsu5.org. Once your gmail opens, select ‘More’ and then ‘Drive.’

Step 4 - Ok, we now need to change the settings. Meaning, at the VERY bottom, select ‘View Google Drive in: DESKTOP,’ NOT mobile.

Step 5 - Select ‘Continue to desktop version.’

Step 6 - Ok, now you should be able to see your Google Drive Documents and Videos. Often, it takes a little while for your video to upload and view. Once it is ready, click on it ONCE. Your screen will go ‘dark’ and a little window with your movie will open up in the center. Now, look at the bottom right of your screen. There will be a little icon with a person and a + sign. Touch it. We need to change the sharing and permissions.
USING TEACHER WEBSITES AND STUDENT DIGITAL PORTFOLIOS TO ENHANCE STUDENT LEARNING

**Step 7** - Change the sharing and permissions to ‘Public on the Web.’ THEN, **copy the link** at the top of the screen. Select ‘Done.’

**Step 9** - When your digital portfolio site opens, select the specific page you would like to add the video reflection to. **Select the little pencil icon** in the top right to edit your page. Type ‘Video Reflection’ underneath the image of your artwork. **Highlight** the words ‘Video Reflection.’ Once the words are highlighted, select the ‘hyperlink’ icon from the tool bar (it looks like a chain/infinity sign).

**Step 8** - Open up your digital portfolio by going to ‘More’ then ‘Sites.’
Step 10 - Select ‘Web address.’ Text to display should already state: Video Reflection. PASTE in the link to your video where it asks for ‘Link to this URL.’ Then, check the little box that states, “Open this link in a new window.” Select ‘OK.’

Step 11 - Lastly, SAVE your webpage. Make sure your Video Reflection link works… 😊
Creating QR Codes

QR Codes are pictures that can be scanned (using a smart phone application) that will then take you directly to a chosen webpage. They take the place of typing in a long url address. Many advertisers now use them in magazine ads. You are each going to create a QR code (picture) that will link to your digital portfolio and project pages.

1. Open up your recent project of your digital portfolio. Copy the url (command C). Make sure that it is the specific assignment page. It should look something like this: https://sites.google.com/a/rsu5.org/ms-medsker-s-magic/

2. Go to the following webpage: http://www.qrstuff.com

3. Choose “Website URL.” Then paste your webpage address directly under URL. **Make SURE to DETELE http:// that is already there!!!** Click “Enter/Return.” Your specific QR Code will then download.

4. Click on your new QR code and drag it to your desktop.

5. Rename it with YOUR NAME and the NAME OF THE PROJECT. DO NOT get rid of the “.png.”

6. E-mail the QR image to medskerk@rsu5.org as an attachment.
### Technology Department Survey Results

*2 staff members participated in the survey*

<table>
<thead>
<tr>
<th>Question</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is the annual cost of our 1-1 program?</strong></td>
<td>Responses: $125,000 to 130,000 at FHS. This is for iPads, apps, the wireless network at FHS, and some Professional Development offered by Apple/DOE. This does not include local costs for increased PD or staffing.</td>
</tr>
<tr>
<td><strong>Where does the MLTI funding come from?</strong></td>
<td>Responses: MLTI is funded locally at the high school. At the middle school in grades 7 and 8, it is funded by the state. The taxpayers, via the Maine Department of Education</td>
</tr>
<tr>
<td><strong>How is the technology equipment maintained?</strong></td>
<td>Responses: We do continual asset inventory throughout the school year. Each summer, we do a physical inventory and inspect each device. Through the MLTI program.</td>
</tr>
<tr>
<td><strong>What support (administrative or other) do you receive?</strong></td>
<td>Responses: I'm not sure what you are asking here. Through the MLTI program.</td>
</tr>
<tr>
<td><strong>What do you think Freeport High School utilizes the National Standards in Technology?</strong></td>
<td>Responses: We used them to complete our Tech Plan. This is not clear to me.</td>
</tr>
<tr>
<td><strong>What do you think is the weakest aspect of the MLTI program?</strong></td>
<td>Responses: The fact that there is so little other support beyond the hardware for change. The potential is so amazing but we have made very little progress toward really changing education. School leaders need to have a better sense of how to bring instruction into this century and to be able to articulate that vision to their teachers and communities. Time for professional development and training. There simply isn't enough time (and money) during the year to do this effectively.</td>
</tr>
<tr>
<td><strong>How do you, personally, stay 'current' with technology?</strong></td>
<td>Responses: I enjoy reading about current technology trends and staying aware of what the big companies (Apple, Google) are doing. I have my own professional network of other integrators in this region and a large network of inspirational professionals who I follow on Twitter.</td>
</tr>
<tr>
<td><strong>Anything else you can provide as data or as a reference for using technology to enhance curriculum?</strong></td>
<td>Responses: The hard part of any 1:1 program is the level of adoption and integration. Here's a link to the SAMR model which is pretty good, <a href="http://www.hippasus.com/rpweblog/archives/2012/08/23/SAMR_BackgroundExemplars.pdf">http://www.hippasus.com/rpweblog/archives/2012/08/23/SAMR_BackgroundExemplars.pdf</a>. FHS and most high schools in Maine are mostly in the substitution/augmentation range.</td>
</tr>
</tbody>
</table>
Appendix B2

Post-Classroom Implementation Student Feedback Results

*What is the point of creating of digital portfolio reflections?

Student survey responses

*It is important to be able to reflect on your art and to articulate what you like and don’t like and why you did or didn’t do certain things. As an artist you are always required to write artist statements and to explain your work, especially when it is more conceptual. Additionally, it is helpful to articulate your decisions even to yourself, because you might not know why you chose a certain color or object until you really start to think about it – (Student #23)

*In my opinion, I don’t really see much of an importance in them. Maybe that’s why my grade is so low, but I just don’t see it as all that important. We have critiques in class, and only the teacher is viewing our website, so I don’t really see why we need them all that much – (Student #25)

*I think the importance of portfolio reflections is so you can really think about what you did in the project. I think it really helps you improve because you look at your art and have to think about what you can improve and what you did to make it look the way it does. This helps you learn because next time you’re doing a project you can think back to what you learned from the other one. If you never reflect on what you did it would make it harder to learn – (Student #22)

*To reflect on what you did and what you like and what you struggled with on your project. Also, to be able to tell others why you created what you did. For some projects there might be a hidden meaning behind what you created. By doing a digital portfolio reflection you are able to tell people about the message behind your work – (Student #20)

*The importance of the digital reflection is so people can read and understand our art and process. However, I’m not sure anyone goes to our websites. Also, it’s practice for those of us that plan to continue art in college – (Student #19)

What struggles (if any) did you face when creating your video reflection?

Anonymous student survey responses

*Actually getting it done

*It went pretty well, not many struggles at all

*Went well, I was able to record when it’s quiet at my house or when no one’s home. The only struggle I had was recording. I hate hearing my voice. There are some parts where I would pause for a couple seconds or forget what I was saying and I forgot that you can actually pause while recording, too, so I may sound quite awkward

*The video reflection was easier than I thought. At first I thought it would be really hard to talk about one picture for a minute but once I started I realized that it actually wasn’t that hard. I didn’t really have any struggles. I did realize that you had to click on your picture on your website and save it when it was bigger otherwise it was very bad quality on the video

*I’m currently struggling with uploading my images but otherwise not so much. I don’t have wifi at home so I
would record my talking about the image without having it there, which was unique and I really hope I got the pictures into the right place. Once I started talking it really wasn’t as hard as I thought it would be

*The video reflection went pretty well. I have used that application before and tried to make a video, but this time it went a lot more smoothly. I think we got more direction and it was easier to create the video. I didn’t struggle with anything expect for when I tried to export it, it took forever

*The video reflection went pretty good. I didn’t really have any struggles, besides the fact that one of my pictures wouldn’t scan in good so it has lines across it. The hardest part about the video reflection for me was that I had to try and finish it so that I could study for other classes and it took a while to upload

*With my video reflection I didn’t realize how long we had to talk about each image so I think mine was shorter than everyone else’s. I often also ran out of things to say. When doing the video reflection it really allowed me to critique my own images and it gave me some really good ideas for different images I could take and develop in the dark room. Also while doing my video reflection I didn’t like the way most of my digital photographs came out. I could have done so much better

*My video reflection was not easy. I found it very difficult at first to critique my own work. I then found myself doing what we always do in class while presenting our images. At first I also found using the audio was hard to explain everything but then got the hang of it

*The video reflection went pretty well. It took a while to write what I was going to say and then say it, but after the first few I got used to it. A struggle I faced when making the video was that it would say that I didn’t save it when I clearly did. Also, after I exported, I wanted to make an edit to it so I went back to Explain Everything. When I tried to open the video it said and error had occurred and it was only showing four slides. I restarted the iPad and the slides came back but it was a little stressful to think that I lost my entire video. Overall this video was easier than ones I have made in other classes

*I had a lot of struggles with the video reflection when it came to the technology, but I got over it. I had to re-record myself a lot because I would stumble on my words or forget what I wanted to say. Most of the talking came easy but it was the technology I had trouble with. Working with iMovie was completely fine because I’m comfortable with how to use that application, but the uploading was the tricky part. I figured it out though

*It took me quite a while to do my video reflection because I really tried to make it good and make my explanations thorough. The only struggle I had while making the slides was that I could not find out how to turn my text italic. The first time I tried uploading it to Google Drive, it didn’t work so I had to do it again but it was taking a really long time