The University of the Arts

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The Graduate Program in Art Education

A CASE STUDY: INTEGRATING VIRTUAL EDUCATION IN A SECONDARY CERAMIC CLASS

by

MICHAEL C. LAYSER

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ABSTRACT

Technology is changing the way educators teach and students learn. This thesis recognizes the growth in technology in the art classroom. It aims to identify certain methods of teaching such as blended and hybrid learning and how they can be integrated with technology into an art K-12 classroom to improve the way information is presented to students. The data collected relies on a questionnaire given to students who were involved in an art studio classroom where technology was incorporated as a way to enhance their learning process. It is the goal of this research to assist in the preparation and training of art teachers to effectively combine technology in the K-12 art classroom with traditional teaching methods.

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CHAPTER I

INTRODUCTION

In recent years due to advanced technology, American education has begun to make a shift in how topics in the classroom are presented and how students are learning the information. According to Barth (2013), technology has been a common presence in schools and has changed the way teaching methods are performed in the classroom (p.33). Since this evolution is affecting K-12 art classrooms, art teachers are realizing the need to use more technology to help aid in educating students. As educators advance further into this age of technology they are faced with more opportunities to employ effective methods of educating students. Technology has provided a critical source for knowledge, comprehension, and application of information to art students. Technology has the capacity to help students learn more and learn better (Barth, 2013, p. 33). The Internet is a vital key to how information is received. Currently, the Internet has moved us into virtual classrooms and provided opportunities to have art classes online. "Virtual classrooms" are defined as an established learning environment where the students and instructors are not present together in a classroom and the use of learning is based on technological aid such as but not limited to Skype, texting, and emailing (Cauthen 2012). While some art classrooms are moving their curriculum and teaching methods into virtual settings, such as blended and hybrid learning, other art classes choose to maintain traditional teaching methods and techniques. However, some art classes are combining both virtual and traditional methods of teaching. Determining how both methods will affect the way a student will learn in the K-12 art classroom is critical to the success of the educational system. By combining virtual and traditional styles together, the best of

both styles may be served when teaching. Having the knowledge of which online methods of teaching will work best is not enough for educators. Art teachers as well as the novice teachers and student teachers will need to be prepared for technological methods of teaching and learning. There will need to be further research on the successfulness of online teaching as it relates to art. Barbour (2010) states that the focus of future research should be about how to use online learning to improve teaching and learning (p. 9). Further research would allow more knowledge to understand what methods of teaching work best in an art classroom. Even if these methods of teaching inhibit a small portion of the art classroom, the technology may result in a change and advances in the students' learning. Preparation will contribute to a large portion of how successful virtual education can be for both the art teachers and the students. If art teachers are not prepared to use technology effectively, then virtual education will be unsuccessful and useless for the classroom and the students. Another requirement for online learning is the need to develop standards for teaching online, which will help aid in determining how successful virtual education actually is in the art classroom. These standards will help guide online teachers through their development of classes as the art teachers being to integrate technology into the courses. The personal experience of the researcher's own integration of technology into the art classroom will lend insight to the variety of ways technology and virtual education can coexist with traditional styles of teaching. These changes applied to the art classroom will provide examples of different methods that can be used. Virtual education will have significant impact on art teacher preparation, student learning, and the classroom as a resource; as virtual education provides new teaching methods supported by technology.

Research Question

How can virtual education and the advancement of technology be successfully combined with traditional K-12 art classroom-teaching methodologies for the preparation and development of effective art teachers?

Statement of the Problem

Given the movement of education to embrace the virtual classroom via technology and the growing and evolving chasm between virtual classrooms and traditional teaching, art educators need to employ both virtual and traditional teaching methods to be effective in the 21st century.

Importance of the Study

The rise of technology has introduced significant changes to the way information can be introduced to the students. According to Allen and Seaman (2012), 32 percent of students are taking at least one course online (p. 4). The widespread use of technology has caused a need for teachers to rethink how they teach and how students are learning (Duhnaey, 2012, p. 198). Educators have evolved to the point where they are no longer standing in front of students lecturing and presenting facts. These lectures can be seen through videos on the Internet for students to learn while they are outside of the classroom. Technology has also made its way in the art classrooms changing how students learn hands on techniques. These techniques can now be learned though video lectures and demonstrations. The students have the option to learn a technique from the teacher or through a video demonstration. As teachers begin to incorporate technology they need to decide how much technology can be used successfully in their classroom.

While new forms of technologies are continuously emerging, each form is accompanied by different ways to use them (Wiliks J., Cutcher, & Wilks S., 2012, p. 55). As the use of technology spreads, art teachers have to become aware of how to engage their classes with new forms of technology.

The primary purpose of this study is to identify successful K-12 art teaching methods that combine traditional and virtual art classroom teaching methods for the preparation and development of effective art teachers. In addition this study will also highlight the effects virtual classes have on traditional K-12 art classrooms as well as successful integration of virtual classroom teachers with traditional art teaching methods to produce effective art courses. The focus will include types of virtual classes and how they work for students and teachers. Examining the different types of teaching methods will help determine what necessary preparation is essential when teaching virtual classes and face-to-face interactions in the K-12 traditional art classrooms as well as determining what style of learning will successfully impact the students and teachers in the art classroom. Through personal experience and observation in the researcher's own classroom, teachers and student teachers will have the opportunity to see examples of how technology integration may work in a studio classroom. In addition to personal experience and observations, teachers will see how virtual classrooms, teaching methods and techniques, and traditional teaching methods and techniques in art support each other. Teachers and administrators will benefit from this research by gaining an alternative way of presenting information to students and understand what might be the necessary steps in bringing these two styles of education together.

Limitations of the Study

The focus of this study will be limited to K-12 art as a subject area and the teacher preparation in art K-12 classrooms in the United States education system. Given that each state varies in the degree that it integrates virtual class in its educational system, specific identification of the particular states using a specific technology will be made when necessary. The term "online" refers to the technology including computers, Smart phones, and Tablets. In this study, the term "virtual school" may be referred to as "cyber school." Resources gathered for this study will be identified from both general online education as well as art online education subject areas. This research acknowledges that there is limited research specifically on teaching online art K-12 classrooms and the data has been largely collected from information in journals, articles, national standards, and the researcher's and his students' own experience. The researcher's sole experience has been in secondary school pottery classes consisting of about ninety students, and thus it provides, some, but not all, of the potential changes to art classroom that need to be made in order to demonstrate how technology can be integrated with traditional teaching methods. The technology used in the pottery classroom is limited to the school district's resources that are available to these particular pottery courses. The information is interpreted from studies done in online education but in some cases not specifically in art online education. The questionnaire given to the students has been based on the changes made in the current school year (2013) most specifically the first half of the school year. Also, not every major change to the classroom and courses has affected all of the students. The information analyzed from the questionnaire is based on information from every student from beginning to advanced pottery course levels.

Definitions of Terms

Blended Learning: A method of teaching that is personalized with a mixture of online instruction and face-to-face (traditional) instruction. A significant portion of teaching content is delivered online. This method of teaching typically uses online discussions through online chats, video chats, turning in assignments, tests, and usually has a reduced number of face-to-face meetings between instructor and student.

Distance Education (DE): is the most encompassing term that refers to educational practices whereby the instructor is physically and geographically separated from students so that instruction must occur through some form of media, be it print and mail, radio, television, computers, or otherwise

Hybrid Learning: A method of teaching in which the classroom instruction is face-to-face with the students and instructor. The use of online exercises and programs are used to enhance this communication but is not intended to replace the face-to-face instruction between the students and instructor.

National Educational Teaching Standards (NETS): Five standards based on the use of technology in a classroom developed for teachers to use to successfully engage and improve student learning.

Online Education: A form of learning that is developed and occurs over the Internet and is accessed through a computer, and does not require face-to-face scheduling of teachers, classrooms, and students**.**

Pottery class: An art course that introduces the student to the popular medium of clay. Through utilizing traditional skills in wheel throwing and hand building, the

students will develop an awareness of three-dimensional form and its expressive potential in the medium of clay. Through group discussion, self-critique, and study of professional work, the students will development aesthetic awareness of this art form.

Traditional Learning (Face-to Face): A method of instruction that is not supported by online technology. The content is delivered in written and or oral form excluding but not limited to basic email, general communication, and submitting assignments online.

Virtual Classroom: An established learning environment where the students and instructor communicate via computer (online) and are not physically present together in a classroom and the use of learning is based on technological aids such as, but not limited to, Skype, texting, and emailing.

Virtual School: An establishment where students learn most or all of the teaching content online (on the computer) without the need for face-to-face meetings.

Web-facilitated Course: A class that supports traditional face-to-face learning where the instructor may use Internet-based technology to enhance the course. i.e., posting assignments and online syllabus.

Wheel Throwing: This is an exclusive course that will give the students an opportunity to further develop their skills on the potter's wheel. Through various demonstrations, self critiques and group critiques, students will explore every aspect of the potter's wheel and will learn to make a variety of forms.

CHAPTER II

LITERATURE REVIEW

The increase in technology has given education the opportunity for significant change in how information is presented to students in the classroom. These advances in technology require further exploration into the steps necessary to prepare teachers how to use technology successfully in their classes. The literature reviews a brief history of online education related major concepts, the integration of art into online education, and how the combinations of both impact the preparation of teachers to establish a comprehensible foundation for this research. The American InterContinental University (AIU) and Distance Education History as well as Allen and Seaman (2008), Morre and Kearsley (2012) all provide a brief overview on the history of online education. This brief history in how online education provides a strong background for the direction in which online education is heading today in the education field, as well as how it is affecting art education. Education has been through many changes over the years and one of these changes is the use of technology as it is being integrated into the classroom, which is allowing students to learn outside of the classroom. Educating people with the help of the Internet started small, and not in K-12 schools. When online education was first introduced to the education field, various companies trained new employees by using this style of teaching and by the mid-1990s different software developers produced programs that made course information more accessible to students (AIU, 2008, para 2). Once these various companies showed success in teaching and learning, schools began to use programs to educate their students. By 1996 asynchronous learning networks were supported by The Alfred P. Sloan-C Foundation, which maintains the ability to deliver

education anytime and anywhere through the Internet ("Distance Education" 2012, p. 1). The education system has reached a crossroad of virtual education where students are taking their courses online, while sitting at a computer.

The research has shown a progression of change in the growth of education over the years particularly in virtual education. Representing leaders in the field of virtual classrooms Moore and Kearsley (2012) and Roscorla (2013) have introduced the growing importance of technology and its impact on traditional education. According to Moore and Kearsley (2012), the idea of learning outside of the classroom was originally called distant education and with distant education there have been five different generations (p. 23). Today, we are currently involved in the fifth generation, called Internet/Web, which involves teaching and learning in a "virtual" or online classroom (Moore & Kearsley, 2012, p. 23). The term distant education or distant learning has made a shift over the years and is now referred to as "virtual" or "online" education ("Distance Education" (2012), p. 1). This style of learning is proving to be a popular way of learning for the students and as we advance into a fully technologically-based society, the names for these styles of learning have changed.

The names for the different styles of learning are represented by different terms and definitions in the literature. Allen and Seaman (2008) and Johnson (2012), uses terms such as, traditional, blended, hybrid, and online classes throughout their writings and research. There important terms have been used throughout this research and it is essential to understanding their context to this research. Allen and Seaman (2008), Fox (2010), Imbriale (2013), Johnson (2012), and Poirier (2010) all provided useful definitions of related terms such as blended learning, hybrid learning, virtual schools, and

traditional learning. These terms help in establishing a strong sense of how these online methods are used while teaching. These authors also provided suggested guidelines for teachers to help aid them in becoming more aware of how to run a successful integrated classroom.

Looking more specifically at the various styles of learning, the literature focuses on blended learning and the impact it has on a classroom. Imbriale (2013) and Johnson (2012) provided explanations of blended learning and how it is designed to work in a classroom. Using these authors' definitions and explanations, a proper measure of the level of success a teacher has achieved can be determined. There are a few major styles or methods of learning where technology has taken some part in the classroom. One of those styles of learning is called blended learning, which is about the personalization of learning for the students and this style allows both students and teachers the ability to break away from the isolation of the classroom (Imbriale, 2013, p. 31). The personalization of learning is designed to benefit the students' learning and to improve how they will learn the information. The teacher will still need to be up-to-date with professional developments in technology learning, as well as the resources used for the courses will need to be updated with accurate information (Imbriale, 2013, p. 32). According to Imbriale (2013) the primary goal of blending learning is to combine how the instruction is delivered online and with face-to-face interaction (p. 32). Classes still meet daily, face-to-face, but the classroom time is used to discuss, apply, and clarify the lesson's content while the time spent outside of the classroom is used to access the curricular content by listening to lectures and reviewing the lesson's content (Johnson, 2012, p. 84). There are still teaching instructions in the classroom, but more class time is

spent discussing the lesson, confirming understanding and clarifying the information about the lesson. The time spent outside of the classroom is designed for the students to learn about the lesson and develop questions that can be answered in the classroom.

The literature also provided another type of learning that is similar to blended learning, which is call hybrid learning. Fox (2010), Johnson (2012), and Poirier (2010) gave explanations to hybrid learning and how it can be used in the classroom, as well as how both of these styles of online learning will engage student in promoting a successful learning atmosphere. Given their similar styles of teaching, the hybrid form of learning is sometimes interchangeable with blending learning style (Fox, 2010, p. 38). Hybrid learning has a significant part of instruction performed online, which reduces the time spent in the classroom (Poirier, 2010, p. 28). This gives the students more time outside of the classroom, for example, a student may spend three days in the physical classroom with the teacher, learning and the other two days learning on his or her own in a study hall, computer lab, or even at home (Johnson, 2012, p. 85). Since the student will not be actively learning face-to-face with the teacher, the expectations for each assignment will have to be made clear and easily understood by the student. Ultimately these styles of online education are about engaging the students. The information presented through the Internet should be up to date and accurate for both the teacher and the students. The teacher will need to be able to use the course information to successfully teach the student while he or she is outside of the classroom. Poirier (2010) says that the best features for online learning are to promote an active independent learning style and reduce class time (p. 30). In the art classroom, engaging the students is one of the key components for successful learning.

Various studies lend support to online classes and the opportunities that are presented to the students. Barth (2013), Demaria and Bongiovanni (2012), and Feliciano (2006) gave support to online education with evidence on the increase in online programs in the U.S. These authors are also looking further into online education by providing arguments between online education and face-to-face education interaction, which will help in deciding what teaching methods will successfully help K-12 art teachers and their preparation in the classroom. Feliciano (2006) agrees with Demaria and Bongiovanni (2012) and supports students taking general classes online. Demaria and Bongiovanni (2012) believe that online classrooms give shy students a safe environment to share their ideas (p. 40). These online classrooms may be useful for students with social problems but there is still the concern with the lack of information concerning how schools are going to prepare teachers for this shift into technology. Barbour (2010) and Feliciano (2006) presented information that supports the use of online classes, because students enjoy the social networking and feel more comfortable answering questions and joining in discussions while using online networks.

The research reveals how technology has been already incorporated into classrooms in various subjects since the invention of the Internet, but research also still supports the interaction of face-to-face teaching in the classrooms, more than it does online teaching. Belair (2012), Feliciano (2006), Barth (2013), and Barbour (2010) contributed information and support the interaction of face-to-face teaching in the classroom. In a 2012 poll in the United States, Germany, and China, 9 of 10 parents believed that technology would improve their children's ability to learn (Barth, 2013, p. 34). The use of the technology is evident but the success of technology in the classroom

still needs some more proof. This data was helpful in its representation of how involvement in technology can be helpful in the K-12 art classroom. The measure of success for these virtual classes and online schools of any subject is based on the students' performance and the ability of the art teacher to deliver the lessons. Barbour (2010) reminds us that the success in teaching with these online methods is primarily the results of the teachers' roles in successfully presenting the information to their students. In a recent study, Barbour (2010) wrote that there were no examinations to evaluate this new teaching practice, which would provide evidence to prove that the best practices were being used in online teaching classes in order to support improvements in teaching and learning in the schools (p. 9).

The literature presented information about the positives and negatives on the style of learning that will determine how and where these styles can be taught. Belair (2012) and Feliciano (2006) contributed information on both the positives and negatives of online learning, as well as face-to-face learning. Their research, builds a strong base for both sides of teaching. The increase of virtual education in the classrooms raises concerns about the involvement of the art teachers and their face-to-face interaction with students. Art teachers in schools today have largely been prepared to teach students who are physically in their classrooms. There is no denying that face-to-face interaction is successful for art students because it is the style that is used today. Face-to-face interaction has a strong effect on students in that face-to-face teaching helps give the students structure and guidance. Some students are fearful about online education because of the lack of the teachers in the classroom (Feliciano, 2006, p. 8). In an art classroom, the presence of the teacher can play a large role in how the students will learn

the techniques, and how to use the equipment and materials safely and effectively. Students also need the presence of the teacher, to help the focus, stay on task, and provide a sense of security for them while they are learning. Some students also feel that a lack of interaction with other students was something that they considered to be a negative with online schools (Feliciano, 2006, p. 8). Although the interaction between students can be a form of distraction, it is a good way for students to learn how to work together and even help each other while in the classroom. Having the ability to talk to someone about one's work would seem to be vital in a creative atmosphere of an art classroom.

The literature supports the face-to-face interaction between teachers and students. The contribution of the Deborah Feliciano case study showed that it was not only the students who felt the lack of interaction as a negative in online schools but that the teacher also experienced the same. Feliciano (2006) says teachers felt the lack of a physical presence was detrimental to the students and the learning process, and that without the physical presence of the teacher there would be no one to hear student concerns (p. 8). Teachers still feel that it is important to be able to see the eyes of students to truly know if they understand the concepts and that with some of these media tools there is a delayed response creating more wait time to hear the answer (Feliciano, 2006, p. 8). Face-to-face interaction is something that gives immediate responses and results along with the ability to "read" the students to see if they fully understand the current concepts. According to Belair (2012) "online schools do not have the added benefit of face-to-face expressions and body language to enhance their messages" (p. 26). Feliciano makes a strong case for the importance of face-to-face learning, but the use of online learning is still being used in many classrooms. It is important to establish how much

technology is going to be used and how it might take away from face-to-face learning between students.

In the area of course design, scholarly articles provide arguments and debates on whether or not teaching art online can be a successful form of education. Mangan (2011) and Poirier (2010) provided examples of successful integration of art K-12 courses for blended learning. These authors identify what types of art courses would be best suited for online learning, focusing on blended education courses in general, and the structuring of online art courses. According to Mangan (2011) "The idea of blended learning is on everyone's radar" (p. 4). Having art courses in the blended format would give students a lot more opportunities to take different courses, but determining if these courses can provide the best learning environment for the students and the teachers is yet to be resolved. Poirier (2010) said that the time in the art classroom is reduced but not eliminated, and that by using more technology in the classroom, the students receive the very best type of education involving both online and traditional learning styles (29). Online courses open a whole new world of educational possibilities but there are some restraints that question whether art online can be successful in the arts. There are many different types of art courses that are offered, which questions what courses would be most suitable for online instruction. Another argument against online art courses is that the distance from the actual art objects themselves on a computer screen is not beneficial for students learning (Mangan, 2011, p. 2). Peter Barna, provost at the Pratt Institute, is worried that an online format for these classes would be too restrictive and a course such as drawing would have to have specific boundaries about how the students are allowed to express themselves (Mangan, 2011, p. 4). The point that Barna makes is that online

courses lose their material qualities, for example: gloss, shine, and matte image, as well as 3 dimensional objects. The author's data examined how these courses operate, how students can benefit from the course structure, and ultimately how art teachers can be effective and more prepared to teach their students.

Integrating technology and art into the classroom is essential, and some authors describe the important, as well as the various ways that it can be used in the classroom. Wilks J., Cutcher, & Wilks S. (2012) provide the reader with a progressive timeline to show how art and technology are merging, in the same way that there are many different types of art courses and different ways of presenting information. The use of technology in an art classroom is not an easier way to teach but simply a different way to teach. When art teachers chose to use technology they need to understand how it can, and cannot be successfully used. Blended learning has shown an increase of usage at all levels of the education system and it is vital with the rise of technology integration in the classroom because technology is used extensively throughout society (Duhnaey, 2012, p. 198). Duhaney (2012) and Wiliks, Cutcher, and Wilks, (2012) provide a historical framework for the evolution of art and technology and offered their sense of what teachers must do to be prepared for this change in the classroom. Integrating technology into art education can be achieved with the manipulation of digitized images through graphic design, 3-D modeling, desktop publishing, virtual field trips, creating movies, using computerized kilns, and sharing student's work digitally (Wiliks, Cutcher, and Wilks, 2012, p. 56). These are just a few examples of how technology can draw students into the vast world of art. Integrating technology does not have to consist in a massive overhaul of the course curriculum. However, even though there are many options

available to integrate technology into the classroom, it is not going to be successful if the teachers are unwilling or are unaware how to effectively use technology. In this case, the Internet will remain in the classroom as merely a tool for gathering information. Wilks et al. (2012) stated that educators need to harness the possibilities presented with virtual information (p. 56). At present, technology in the classroom lacks the necessary requirements for teachers to fully accept the possibilities it can provide for their teaching methods.

The literature supports the preparation and use of technology for art teachers but also questions the effectiveness of how teachers are prepared to use technology in their classrooms. Duhaney (2012) provides the information that supports the preparation of art teachers and technology. Roland (2010) backs up Duhaney (2012) and Wilks et al. (2012) position with statistics that the Internet is used throughout the classroom, but also questions how and if it is used efficiently and effectively. According to Roland (2010), the use of digital technology in classrooms is being resisted by teachers because of their reluctance to change their long-standing curriculum, and by a School Administrators who are restricting Internet practices by blocking access to certain websites, search engines, blogs, and media-sharing sites (p. 18). Moreover some art teachers may be unwilling to change their styles of teaching and curriculum because they are not educated in how to use technology successfully. In a 2006 online survey of 225 K-12 art teachers, 96 percent reported that they “frequently” use the Internet to gather information and images for classroom use (Roland, 2010, p. 18). In a similar survey teachers were asked how their students use the Internet for their classrooms. Seventy percent of these students use the Internet to gather information and images for individual or group projects (Roland, 2010,

p. 18). Based on this survey the Internet is used extensively for gathering information, but teachers and students can, surely, use the Internet for more than a search engine. Using the Internet for researching images is as much integration as they are willing to use because they do not know the full potential the Internet can have in the classroom. Quillen's research maintains that technology proficiency should be integrated in the preparation of future teachers. The use of technology in the classroom is not yet a mandatory part of any specific curriculum, but it is slowly making its way into the classroom because of the students who use it and are exposed to it in their daily lives. Therefore art teachers need to find a way to use new and emerging technology creatively in their classrooms and to be creative in how they are using it. They need to make sure the programs and devices that are used in the classroom benefit the learning environment for the students. Art teachers should use the technology to help encourage critical thinking rather than a program where students are simply "clicking" their way through a course (Roland, 2010, p. 57). The reason we are not seeing the rise of technology in traditional classrooms is because it is not a priority or requirement for teachers in professional education programs.

According to scholarly sources, some states have begun to develop requirements for teachers to teach online course (Duhaney, 2012, and Quillen, 2010). Research offered evidence of states having requirements for art teachers to be able to teach online art courses. In order to teach in an all-virtual environment, teachers are required to attend training sessions in Georgia and in other parts of the country, teachers are required to pass a developmental course in virtual education (Quillen, 2010, p. 1). The teachers who take a development course to teach are at an advantage over teachers who do not, because

they are certified to teach at a more advanced level. Traditional schools have not made this a mandatory requirement but most virtual schools require teachers to do professional development that focuses on online teaching in order to be qualified to teach online (Quillen, 2010, p. 2).

The professional literature provided data supporting the use of national standards by art teachers who evaluate their success through online assessment. A study by Treacy, Baltunis, and Swiderski (2011) discussed current national standards for virtual schools and teachers provided by the International Association for K-12 Online Learning [iNACOL] so that there will be more efficient methods of preparing teachers, students, and student teachers for this new way of presenting information in the art world (Treacy, Baltunis, & Swiderski, 2011). In order for virtual classes and schools to be successfully developed there are certain types of standards that can be applied to this method of teaching. In 2011, the International Association for K-12 Online Learning (iNACOL) developed a revised edition of standards for teachers to follow in order to achieve the highest quality of online courses, and these standards are designed to show what online teachers should know and understand as well as how to use these standards for evaluation purposes (Treacy, Baltunis, & Swiderski, 2011, p. 2). These different standards, labeled A-K (see appendix C). Each standard shows what the teachers' knowledge and understanding should be, as well as his or her abilities and how they can be rated. These standards provide a perfect example of what can be used throughout various school districts. Art teachers have certain educational standards that must be followed as they develop lessons, write curriculum, and prepare to teach their students. The National Standards for Quality Online Teaching could be another important and meaningful way

for teachers to expand their teaching methodologies and begin to prepare to integrate technology into their classroom.

The literature revealed that online education is beginning to be used in art classrooms. Various teaching methods such as blended and hybrid learning have provided templates for art teachers to model their classrooms and teaching styles. The literature also shows a lack of structured and mandated steps for preparing art teachers with the knowledge of how to incorporate technology into their classrooms. Through continued studies the research will help determine the effects on how technology can influence the students' involvement in and outside of the art classroom. This research will help answer the main question for this study: How can virtual education and the advancement of technology be successfully combined with traditional K-12 art classroom-teaching methodologies for the preparation and development of effective art teachers?

CHAPTER III

METHODOLOGY

The increase of technology in the 21st century is affecting how teachers in the art K-12 classrooms teach their art courses. The growing need for technology in the art classroom is causing teachers to enhance their teaching methods by incorporating both traditional and virtual teaching methods to become effective and successful educators in the 21st century. The focus of this research is to determine what type of virtual education methods are necessary for a K-12 art classroom, as well as what the necessary steps might be in preparing current art teachers and future art teachers in how to use virtual teaching styles in their classrooms.

Research Perspective

This research will be mainly a qualitative explanatory, descriptive approach that focuses on historical and philosophical inquiry. This qualitative approach will be used to explore the historical background of virtual education in order to understand how this style of education has developed throughout the years. Included in this approach is a description of virtual styles of education as they relate to traditional styles of education. This qualitative approach will also explore the art teachers' level of preparation and subsequent evolution in incorporating these two methods of teaching successfully in an art classroom through explorations of different teaching methods preformed in the researches' own classroom. The research will also have quantitative research developed and analyzed from a questionnaire where percentages will be used to show students' opinions as they relate to the art classroom and the teaching methods.

Research Type

A benefit to this study is the compilation of historical information on these alternative styles of learning like hybrid and blended learning. The historical background gained from various journal articles allows proper definitions to establish the differences between these two styles of learning. Studies were analyzed to show positive and negative effects on different teaching and learning styles. The philosophical data has provided enough information, however, to understand the different teaching styles. Some of these styles like hybrid and blended learning are not fully designed for every subject, especially art. The philosophical data provided enough information to understand the structure of these styles of learning.

The researcher also experimented in his own classroom by integration technology in various different ways to reveal how technology can affect student-learning environments. The research included different virtual styles of learning such as hybrid and blended learning that are different from the traditional styles in order to better understand the two forms of education: the traditional and the technological. A questionnaire helped compile information on the changes made to the art classroom to help determine the effect the changes to the traditional course had made on the students and their work in the art classroom. The questionnaire also provided information that was analyzed to determine the success of these different teaching methods.

Research Methods

Through various journals, art magazine articles, and other art theses, questions were answered that lent insight to the different styles of education, such as blended and hybrid learning, as well as, face-to-face learning, and virtual education. The information gathered helped clarify the differences between the various styles of learning. Case studies were also used to provide data as to the effectiveness of virtual education, face-to-face interaction, hybrid and blended learning with students and teachers. These studies provided insightful examples of how each style of learning were used, which presented the information that was gathered in determining the success of each learning style.

Art journals and articles from various art magazines, as well as web-based articles from EBSCOhost, provided a strong descriptive view as to how virtual schools are designed and what their overall intentions are for the students and educators. These different articles and journals also helped to answer many concerns or questions about virtual education and what the effects are for the art classroom, teachers, and students.

These art journals and articles presented steps that are currently being taken to establish successful ways to prepare art teachers and students in the art classroom. Analyses of these articles also provided reusable information on possible ways to better prepare art teachers and their classrooms for the involvement of virtual education. These articles also suggested ways to incorporate virtual education with traditional education so that the art classroom will continue to be inspiring and exciting for the students to learn. Through the information collected, specific changes were made in the researcher's own

classroom in order to demonstrate the information analyzed in the art journals and articles, as well as in various education journals for this thesis.

The use of the researcher's own classroom gives first hand experience of how technology was used, based on the information gathered. Changing the way information was presented to the students, further knowledge was gathered to determine what was successful for the art classroom. The use of a questionnaire was used to determine which changes successfully affected the largest number of students. The questionnaire was designed to show if the changes made to the art classroom affects the students in a positive or negative way and it was also designed to show some examples of changes that could potentially be used in other types of art classrooms. The use of a questionnaire provided data to translate and explore the success of the integrated technology as it relates to the art classroom and students.

By analyzing the information from various references, a new style of teaching was used that will allow new teachers and current teachers to explore, study, analyze, and incorporate virtual education in relation to their own face-to-face teaching style. This information helped establish and show how these two styles can work together to maximize student potential in and out of the art classroom. Comparing and contrasting the different styles helped in developing a set of standards that focus around the research of virtual education and the art classroom. The intentions for the research was to investigate if further preparation is necessary for teachers and what steps may need to be taken to educate current teachers and future teachers. The use of the researcher's own art courses were used as an example of what type of technology could be used in a studio art

classroom. Analyzing the results from the questionnaire provided various ways a studio art classroom can be enhanced by the integration of technology.

Population

The targeted audience for this research is K-12 art teachers and administrators, as well as any student who is interested in becoming an art teacher. Art teachers and administrators will benefit from this research by gaining an alternative way of presenting information to students. They will discover there are important conditions and steps that must be made to effectively bring virtual education and traditional education together. The population that was used for this research was focus around, but not limited to, K-12 students and teachers. The targeted audience, looking at this material, will also be able to observe some ways that technology can be used in an art classroom. The use of technology will be limited to an art studio course and the changes made will be shown through a questionnaire completed by the current students in the art classes.

CHAPTER IV

ANALYSIS & RESULTS

Integration of Technology into the Art Classroom

Through the use of my own classroom where I teach Pottery I, II, III, and wheel throwing, I incorporated different forms of technology with the aim of better serving the students and helping to expand their knowledge through allowing more and different opportunities for them to work in their art classroom. I also gave the students the opportunity to work outside the classroom in order to give them more time to actually work in the art studio when they were in school. As an art teacher I am currently teaching tenth through twelfth grade pottery courses. When teaching pottery courses, a lot of hands-on-learning and face-to-face interaction that occurs between the art teacher and student. The way my classes are designed the students learn primarily by demonstrations preformed by the teacher and then after each demonstration the students will work on their own projects while the art teacher moves around the room assisting with any problems and answering any questions. Each lesson was introduced by PowerPoint, which had the guidelines for the project and a few examples on how the project might look when it is completed.

In order to integrate more technology into my classroom I decided to change how each pottery lesson would be introduced. I analyzed the San Francisco-based Academy of Art University, which has courses online that include sculpture and painting and are designed for students to watch video demonstrations and tutorials, as well as videotaped lectures to learn the necessary skills (Mangan 2011, p. 1). Although this is not a high school, the idea and structure of the courses can still be applicable for a high school

course. This art course is taught as a blended class with demonstrations, tutorials, and lectures that are viewed and studied at home and then applied in the classroom. These courses still require the presence in the classroom by the students and of a properly educated art teacher with the skills to operate the necessary equipment for the designated class. Using this idea, I have created a class blog that contains instructional videos for the students to watch outside the classroom. These videos act as a preview to a new lesson and project so the students can begin to familiarize themselves with certain techniques and the lesson itself. After watching the videos the students are introduced to the lesson the next day by the teacher, and then a demonstration follows to help maximize the exposure to the different ceramic techniques. I have found that the students benefit greatly from seeing a technique performed by multiple people, i.e., the teacher and various people in the instructional videos.

Students' Survey Results

In order to know if the changes to the classroom were beneficial for my students' learning process, they were asked to answer a questionnaire (see appendix A) containing various questions that related to the changes made to the pottery courses. When asked if it was helpful to see another person or video perform certain techniques before the teacher does a demonstration, fifty-five percent of the students said that seeing another person or video perform certain techniques before the teacher performed a demonstration of the techniques were helpful to them (see Figure 1). The idea of having the students view the videos before they come to class gives them an idea of what the teacher is going to demonstrate for that lesson. Fifty-five percent of the students found the video to be very helpful or somewhat helpful. thirty percent stated that the video neither helped nor

did not help them in learning the techniques. Only fifteen percent of the students that found this video and technological innovations can be utilized more easily than in hands on studio art course. With any art course integration with technology, certain changes and specific guidelines will have to be made in order to accommodate this virtual experience into real handwork.

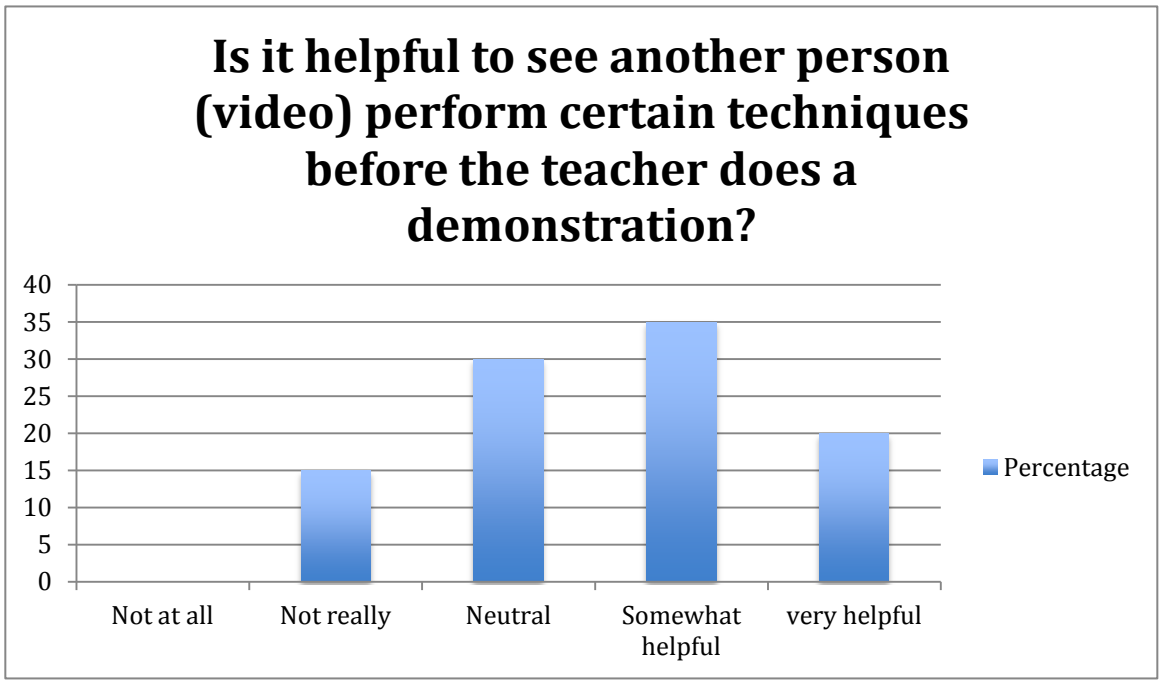

Figure 1

In other classes like digital design and art history, courses can be structured more easily to integrate technology than a labor-intensive studio art course. Any art course being integrated with technology will have to have certain changes and specific guidelines to accommodate for the virtual experience. In my own classroom I have been using a blog to post different readings for the students to read outside of the classroom, which allows more class time for working on projects. The readings act as part of our class discussion while students work on their projects. Reading outside of the classroom prepares them for what will be discussed in the classroom, and since the students have

already read the material, discussion can occur while each student is working individually on his or her own project. The readings are posted online through the blog site so the students do not need to carry copies of the readings back and forth from school. Everything is digital and available on multiple electronic devices, which gives my students many options as to where and when to read the articles. The parents also have access to the blog so they too can keep track of what is happening in the classroom and what reading assignments are available for the students. In my school district the class periods are short, only forty-two minutes from bell to bell and in order to maximize work time in the classroom the posting of various readings has proven to be very beneficial to the class and the students. In the questionnaire that was given to my students I asked them if the changes made in the curriculum, including the increase of readings, were helpful in class discussion and in their understanding of the projects. The results of the questionnaire revealed that forty percent found the readings posted on the class blog to be preferable to taking valuable class time to read them (see figure 2). Only five percent found the readings to be very helpful. The majority of the students found the readings to be somewhat helpful for the class discussion. There were some students who did not really think the readings were helped in the class discussions. Among the students who answered this question and either agreed or disagreed there were thirty percent who remained neutral about whether the readings were either helpful or not helpful in class discussions. Even though almost half of the classes felt that the readings posted online were helpful in the discussion after they had been read on the students' own time, there were still sixty percent in the classes that either could not decide or believe the readings were not helpful. This information shows that either better articles should be posted on

the blog or that by changing how the articles are discussed might prove more beneficial for students learning. The forty percent who were affected by the readings is a strong enough percentage to say that posting various articles online is beneficial to this type of art course

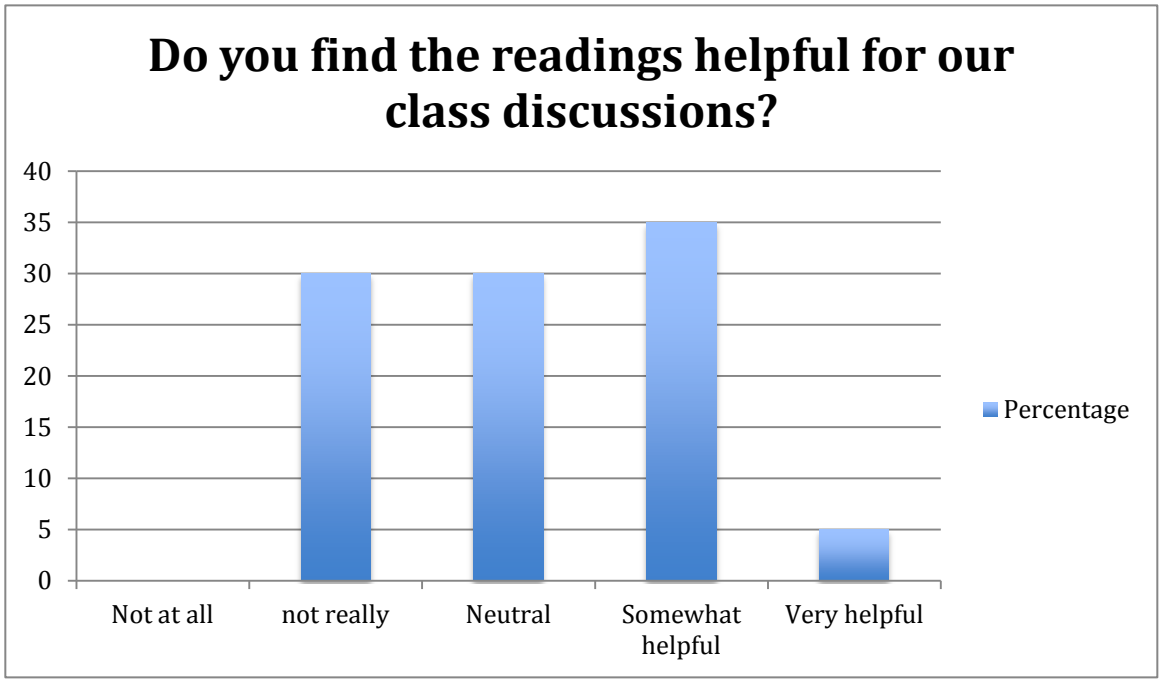

Figure 2

The goal for offering reading outside of the classroom is to develop a dialogue with the students about their work and the content of the course. Reading outside the classroom is also designed to maximize the students' working time in class. If the students read on their own then class time can be spent working on their projects. The students were asked if they felt that reading outside of the classroom helped maximize their work time spent in the classroom (see Figure 3). The results showed ninety percent agreed that it did maximize their work time. The other ten percent answered honestly that they had not read the readings. In this study the readings are assigned to invoke discussion and help the students understand the materials in the course better. My goal

was not to require them to read but instead to see how many of my students would read on their own. I believe that changing the mandatory requirements to read the articles would change the results of the question to 100 percent because the students would be required to read the articles that are posted online. The main purpose of the question was to establish if the idea of posting the readings would help in saving class time and allow more time for the students to work on their assignments while they are in school. It also proves that reading outside of the classroom allows the students more time to work on their projects while they are in school.

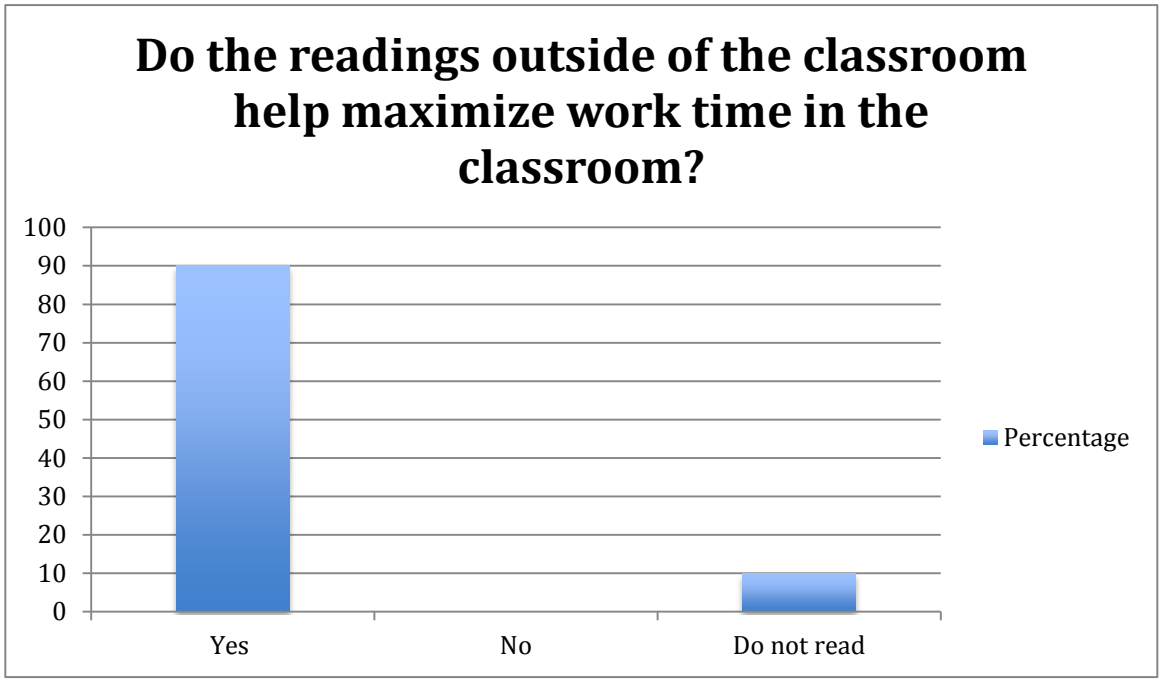

Figure 3

With all of the technology that is available today, there are many different tools that can help with teacher-student interaction. Through social media, such as Facebook, blogs, Twitter, Skype, and the use of other video chat programs; students and teachers can use a new and exciting ways to communicate with each other. There are also texts

and emails that can aid in helping the students and teachers interact more effectively outside of the classroom.

One form of technology that I am using is a Twitter account. Twitter is a way for people to post different ideas, thoughts, pictures, short messages, and personalized statuses to the world of friends that are "following" them. This form of posting is called a "tweet". I am using this program to extend my communication with the students. I use the tweet to say if I have uploaded anything to the website throughout the day. I have used Twitter as a reminder to the students so they do not forget to do an assignment. As a reminder to them of a reading posted on the blog, or as information about a change in the completion date of a certain project, for example if the due dates would change due to kiln firing schedules. I also use Twitter as a way to share pictures of pottery-related images from the different classes; for example: throughout the day as students are creating their projects the students from other pottery classes enjoy seeing the different projects from these other students. I will take a photo and then "tweet" it to my followers. Twitter is a fun way to stay in touch with what is happening in the pottery world as it relates directly to students. The majority of my students enjoy the use of a class Twitter page, with sixty percent of them agreeing it is a fun and exciting way to receive information about the course, as well as seeing what other classes are doing throughout the day (see figure 4). The other forty percent of my students contain ten percent that have some issue with the use of Twitter. 30 percent of my students that do not use Twitter to communicating with other people. The use of the Twitter page is only a way to further extend communication with students and cannot be a main source to present information because not every student uses Twitter or has an account. Twitter is

only a means to make classroom interaction more exciting and interesting for the students in the hope to engage them more intently into their work.

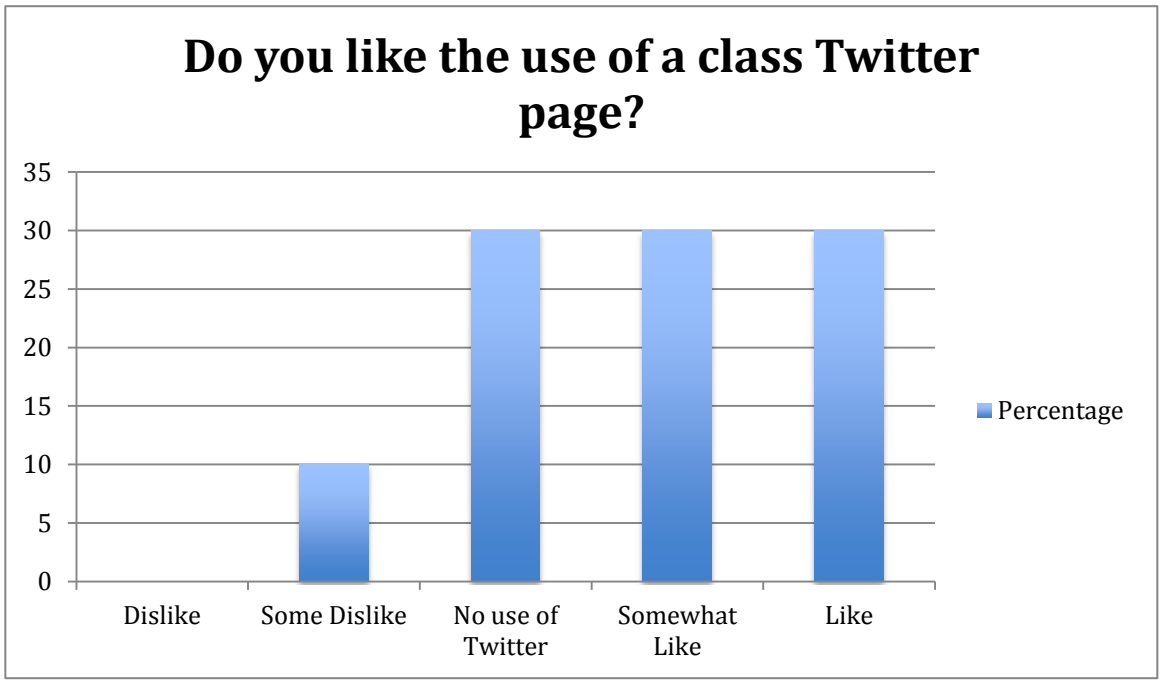

Figure 4

The survey that was given to my students helps to confirm the success of the new changes made to the classroom. The changes were made to see if technology integrated into the course would benefit the students' learning ability by engaging them in what was being taught in the course and allowing them to utilize their time better in the classroom. Using the class blog to posting videos for the students to see certain demonstrations, techniques and troubleshooting tips worked well for the students (see figure 5). There were ten percent of the students who found the videos to be very helpful and forty percent stated the videos were somewhat helpful to them. 10 percent of the students showed they found the videos were very helpful, my classes showed a total of half of all the students found the videos to be beneficial in some way, which suggests they are worth the time spent uploading and including in the course along with the class blog. The other end of

the spectrum shows that twenty percent did not really think the videos were helpful. The reason for this percentage may be because some of my students are more advanced in their ceramic skills than others and might not find the techniques on the video to be helpful because these students are already using the techniques that they enjoyed using. Since I teach multiple levels of pottery, and one would expect the more advanced students do not need to see such skills performed in the videos, because they already know them. 30 percent of the students that decided to remain neutral to the use of the videos. This information is useful because it leaves room for improving how the videos can be presented to the class. 30 percent of students were not sure if the videos are helpful may in time find the videos to be beneficial to them as the school year progresses. The students in this thirtieth-percentile range are key to the question: Do you find the videos on the class blog helpful, because these students have not developed a positive or negative opinion. In order to make the videos shown on the class blog more successful this thirtieth percent of students should be the focus used to evaluate the changes to the nature of the videos.

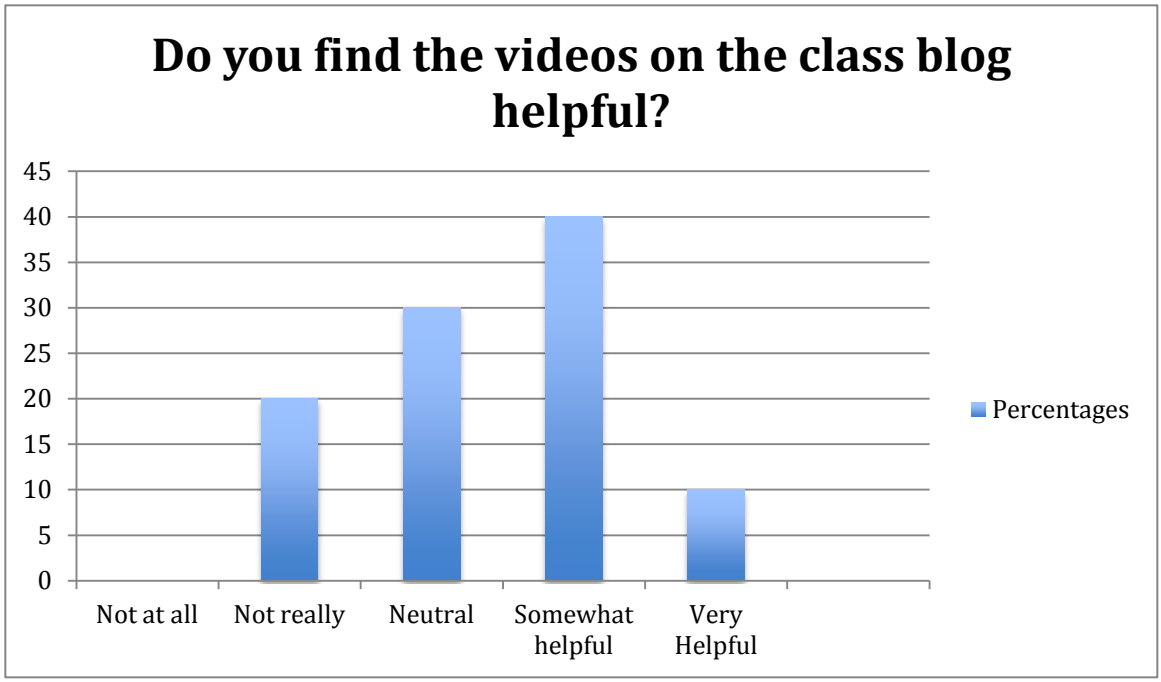

Figure 5

Another big change to the classroom this year was the conversion from the Power Point presentation to the Prezi presentation. A Prezi presentation (see figure 6) differs from a Power Point in many ways. A Prezi presentation is like an animated Power Point where it tells a story as you move around the screen. In a Power Point presentation, slides are viewed sequentially one after another, where as the Prezi is interactive with information moving around the screen from point to point on the same screen. A Prezi presentation also has the capability of using three-dimensional screens that allow the presenter to move closer to a more specific point or pan out and include more of a larger subject. The idea of a Prezi is to engage the memory of the audience, causing them to remember the lesson's content better. Prezis are also a helpful way to view information even if the students are not at school. Because it is web-based, the information can be shared online and viewed anytime. Prezi is also good for teachers who have already have a Power Point and want to make the conversion over to Prezi. Prezi allows you to easily

transfer your already existing Power Point into a Prezi so you do not have to start all over with adding in your information.

Figure 6

Screen shot of a Prezi Presentation

The students were shown a Power Point presentation for one of the projects this year and then for the next project the students were shown a Prezi presentation. When the students were asked, "Do you find the Prezi presentation more engaging than the Power Point presentation?" The majority of the class found the Prezi to be more engaging than the Power Point (see figure 7). 65 percent of the students stated they were somewhat engaged by the Prezi presentation and five percent said they were very engaged. Overall seventy percent of the students were more engaged with to Prezi than the Power Point presentation. Therefore, it is clear that converting the Prezi was a positive change to the course. Only four percent of the class thought the Prezi was not really engaging the

student more than the Power Point presentation. This question still leaves twenty-six percent of the students in the neutral position of more engaging or less engaging, which may be due to the fact that students may not be interested in how the information is presented.

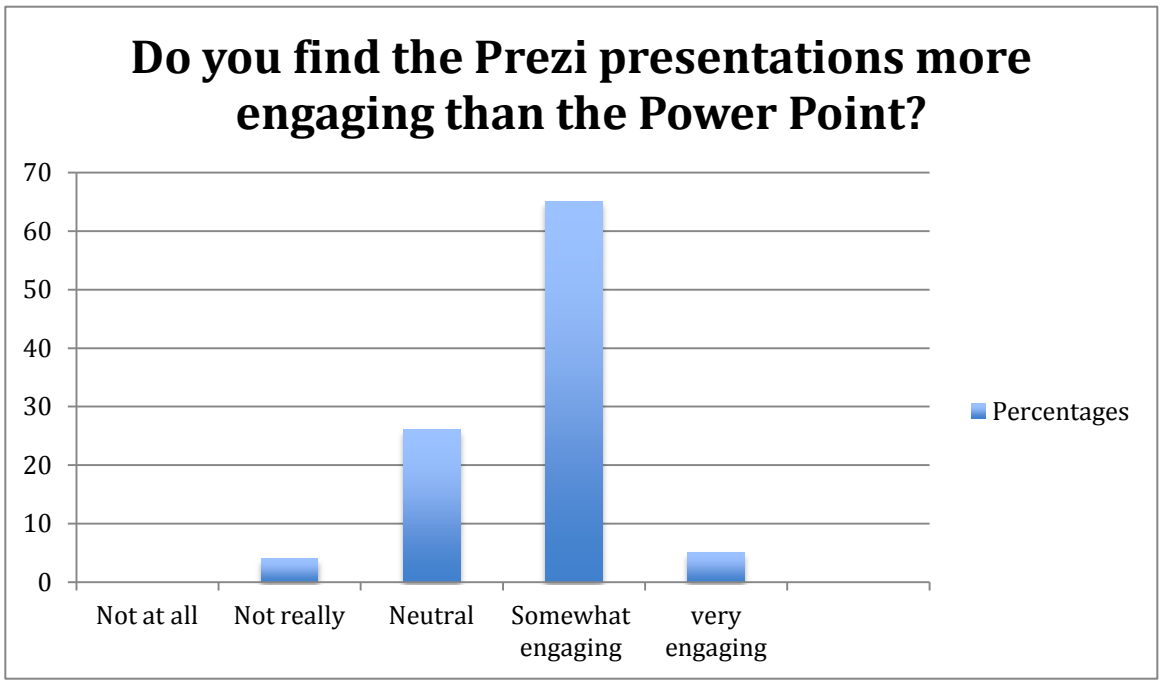

Figure 7

When the students were asked if it matters how the information for the project is presented, via Prezi or Power Point, sixty-two percent of the students said, no, it does not matter (see figure 8). Most students wanted the guidelines for the project ahead of time and did not care how they receive it. This question does not support the previous question: Do you find the Prezi presentation more engaging than the Power Point? This question supports the twenty-six percent of students that are neutral to the effects of the Prezi or Power Point. The high percentage of the class agreeing that it does not matter how the information is presented does not mean that the Prezis are useless. The students may still find them more engaging but they do not need to receive the information in any

special format, like a Prezi or Power Point presentation.

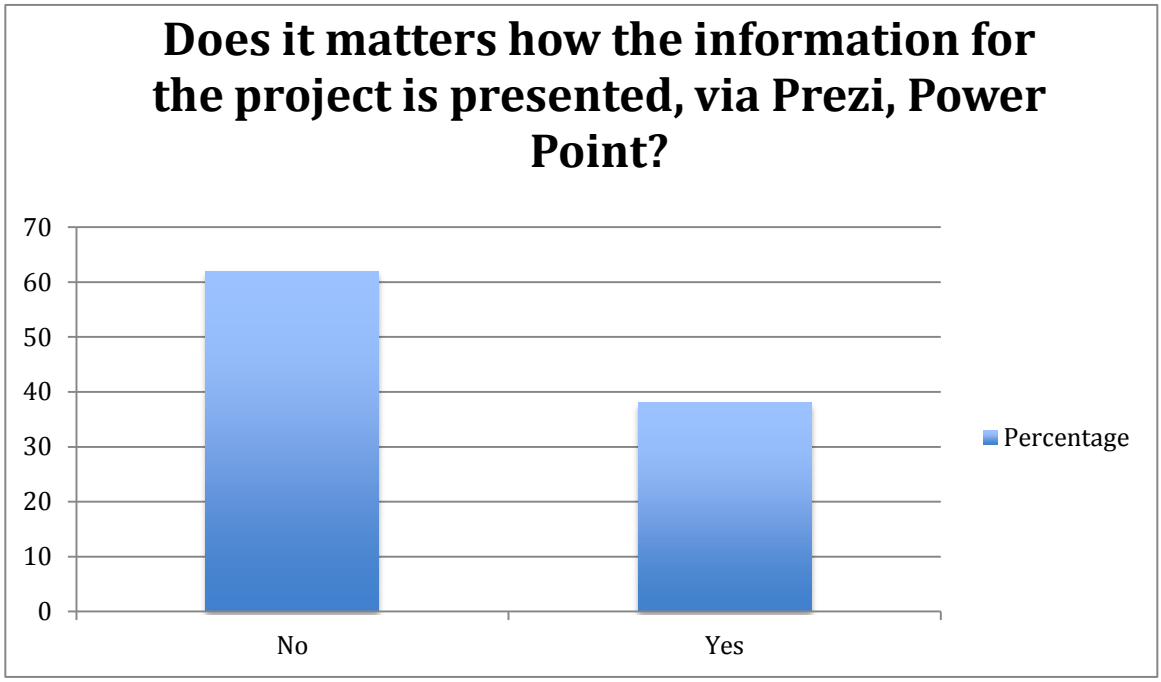

Figure 8

Every year teachers make changes to their classrooms, the courses they teach, or even the way each lesson is presented. I asked my students if the changes made to the classroom were successful so far during this school year because I wanted to know if I would need to change my style of teaching for the second half of the year. It is important to be constantly seeking feedback in order to maintain a successful teaching atmosphere. There were fifty-five percent of the students that believe the involvement of the Prezi, the class blog, and twitter to be useful and successful so far this school year (see figure 9). It is important to note that more than half of the students found the changes made to the class were considered successful, which indicates that the integration of further technology into the classroom might be useful to the students. However thrity percent of the students were indifferent to the changes that were made. This higher percentage could again be attributed to the fact that not all students use Twitter, or find the Prezi

more engaging, or even visit the class blog. My students might need a different type of technology to further engage them into the changes made to the class. The other fifteen percent of students that found that the changes made in the class were not really successful. In total, forty-five percent of the class found the changes to be either useless or unsuccessful.

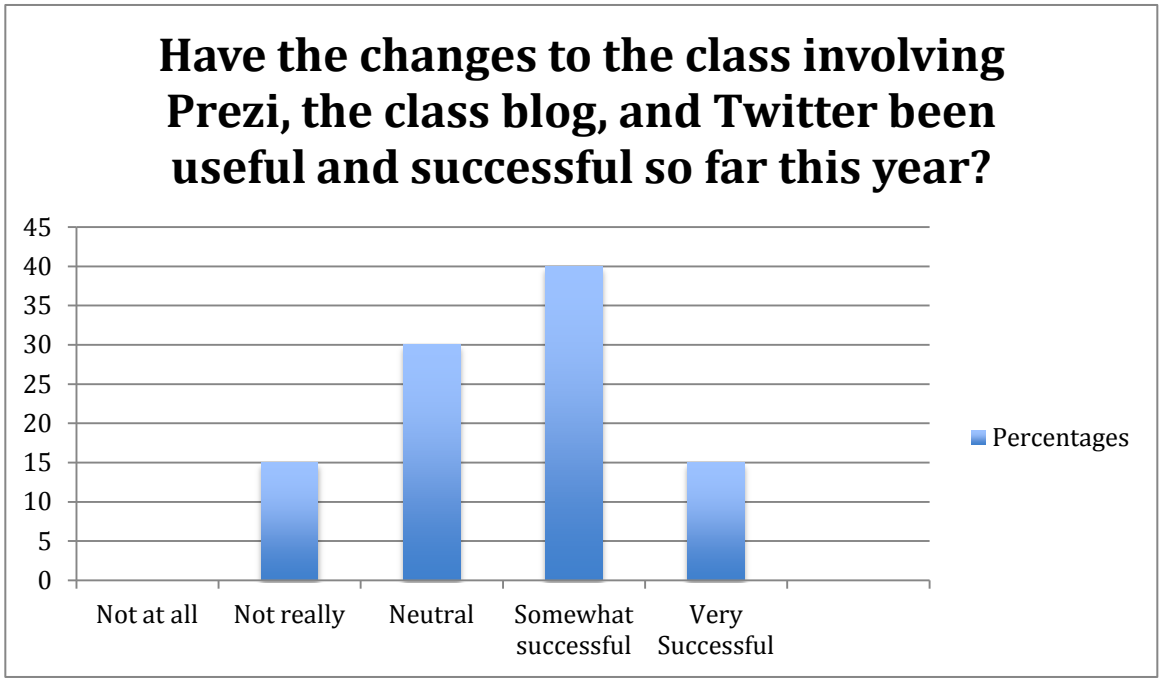

Figure 9

In response to the question, "Have the changes made to the class involving the Prezi, the class blog, and Twitter been useful and successful so far this year?" One final question was asked, "Would you like to see more technology integrated in this class?" The results to this question show that sixty-five percent of the students want to see more technology integrated into this classroom (see figure 10). 13 percent would like to see a lot more technology, and a little over half of the classes are in agreement and would like to see at least a little more technology integrated into the class. While more than half of the classes think more technology is needed in the classroom, thirty percent believe it

should stay the same, and five percent want to see less technology integrated into the course.

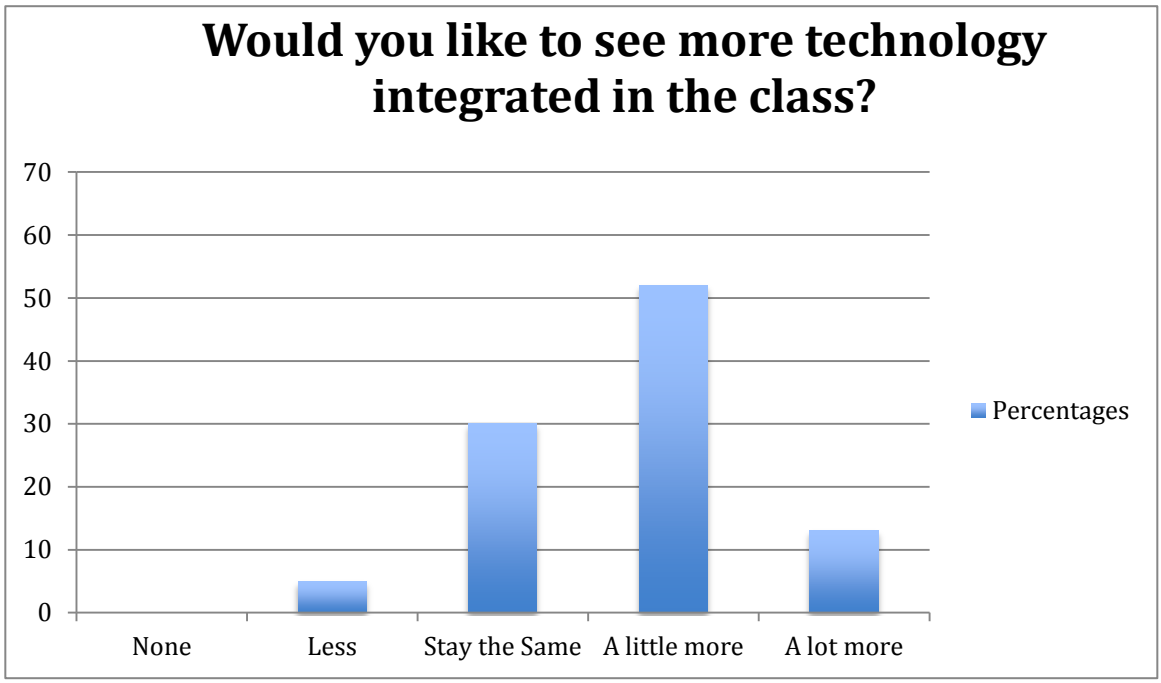

Figure 10

These results show that even though the integration of technology is beneficial to these pottery courses there is additional technology that can be added to the courses to help engage the students more successfully. The changes that have been made to this classroom are small in nature but are large in the effect they had on the classroom. The changes help connect the students more with their classroom and have allowed their parents to be more involved with what their students are doing in the classroom. Parents have access to the website, blog, all of the assignments and projects posted as long as they have an account and the Twitter name.

These changes can also lead to more technological advances as they have proven to be successful so far this school year. These changes are not the end but instead the

start of an art classroom where interaction and learning is not limited only to face-to-face interaction.

Research findings in the literature and the results of the study's questionnaire provide clear evidence that support the changes made to my classroom is that more technology enhances the art class and the students' learning. These results also show that further preparation and can be modified in order to cause more students to see the changes as being beneficial for their learning needs. Any teacher willing to incorporate the use of more technology through online learning can decide what kind of technology to use, as well as how much technology to use in the classroom. The changes made to my classes were encouraged by the use of the National Standards for Quality Online Teaching (see appendix C). These standards provided me with a base to further expand my methods of teaching by changing the amount of technology used to introduce new information. Looking at each standard I was able to assess which standards might be best to address in the art classroom, which was helpful in deciding what to change in the art classroom. For example, Standard B: The online teacher understands and is able to use a range of technologies, both existing and emerging, that effectively support student learning and engagement in the online environment. (Treacy, Baltunis, and Swiderski, C., 2011, p. 5). This standard helped me decide on the use of the class blog site and what information to include on it. Although not every standard may apply, these standards are useful for teachers to follow as a guideline in order to decide if any changes made to their classes will be suitable for online teaching. The guidelines these standards provide can be used by the art teacher to establish what types of technology can be used successfully throughout a studio art course. These standards are broad in their descriptions because

these standards are universal among each subject, not just studio art and can be used in a variety of ways to build a stronger and more exciting classroom.

CHAPTER V

CONCLUSION

The literature and the results of this thesis provided sufficient evidence to assert that that use of virtual education and technology introduced into a traditional K-12 art classrooms are successful stimuli to student learning. The results from this study and questionnaire completed by the students prove that incorporating any amount of technology is beneficial to the success of the students' ability to be engaged in the art classroom. The study also promotes a better understanding of the information as it relates to the lessons taught in the art classroom. The results recognize the success of integrating technology into the art classroom, although these results also show that further consideration of the nature of the preparation for the art teacher so that he or she can integrate technology in his or her art classes is essential in order for this integration to satisfy both teachers and learners.

In today's art classroom there are various ways to use technology. Even in the art classroom, teachers are given a computer for taking attendance, sending and receiving emails, and delivering information to their students. Based on the available research it can be recognized that nearly every teacher is using some form of technology in his or her classroom, as minimal as it may be. As educators, it is important not to loose focus on what is most important, which is to successfully educate the students. In order to be successful and efficient there has to be growth in the way educators teach their students. There are many different ways educators can grow with their respect to teaching, and one big way is to expand their use of technology. Even in a K-12 art classroom, technology can be used to expand the students' involvement in the course, as well as provide

unlimited resources and ideas. Technology can be used as the dominant force in a classroom or it can be used to alter a few tasks and events performed in a particular classroom, because art classrooms should be a fun and exciting place for students to come and learn.

Virtual education with the advancement of technology can be successfully combined with traditional K -12 classroom-teaching methodologies with proper preparation and development of effective art teachers. This preparation and development is successful through the uses of technology in an art K-12 classroom by helping to promote an exciting atmosphere that encourages students to be creative in a whole new and different way in learning. K-12 art education is an important part in the growth and development of a student. The incorporation of different virtual methods of teaching such as blending or hybrid learning into a traditional art classroom provides new and interesting ways of facilitating effective learning.

Preparing Future Art Teachers

As educators move forward with this idea of virtual education and the integration of technology in their classrooms there needs to be some form of further preparation for teachers. This change in teacher art education preparation is not going to happen all at the same time, but there have been some changes already in Idaho. In order to teach in an all-virtual environment, teachers are required to attend a training sessions while in Georgia and other parts of the country, teachers are required to pass a development course in virtual education (Quillen, 2010, p. 1). This type of requirement is not enforced in every state and not every teacher has to attend such development courses. Quillen (2010) states that these development courses are just another “hoop” for the teachers to

jump through, but it is the right hoop (p. 1). It is good for new student art teachers and current art teachers to attend such courses so they are properly prepared. If these development courses do become a requirement, then these courses will only help make student art teachers and art teachers better with their jobs.

The state of Texas is involved in a similar program in which any course that is printed in their Texas Virtual School Network will only be taught by teachers who are certified through an approved professional-development program (Quillen, 2010, p. 2). States are slowly beginning to require some form of professional development for teachers, but with the novelty of these requirements, each state is able to dictate what will be necessary to teach. Idaho is in the process of making a two-tiered certification: one level would be designed for teachers teaching blended and face-to-face classes and the other for teaching fully online classes (Quillen 2010, p. 2). This two-tiered certification, like the one in Idaho, would be exceptional for student teachers and current teachers because it creates valuable options for educators that are not fully teaching online courses, but want to start to integrate more technology into their classrooms. This type of requirement is hoping to be fully implemented by 2015 (Quillen 2010, p.2). This would give teachers the knowledge to successfully use more technology as well as certify them to teach in this new style. Since virtual classes are not mandatory and not every district is ready to fully adapt to virtual education it gives the teachers an acceptable teaching status for online courses, and it also gives the teacher knowledge on how to use technology successfully in their classrooms. These professional development courses apply to all subject areas, but as an art educator, these courses can prove to be useful in the integration of technology into their classrooms. Whether their course is a studio course or

an Art History course, such as a two-tiered certification will give art teachers a better understanding of how technology can benefit the art classroom.

Preparation to use technology is vital to a successful art classroom and in order for virtual education to be successful, teachers need to be properly trained to use technology effectively for teaching and learning. The potential expansion of the Internet is there for teachers to use in their art classrooms. Art teachers need to be taught how to take advantage of the Internet and harness its educational purpose. Roland (2010) says that the Internet can be an innovative learning tool for students to post their work to the Web for feedback from other students and the teacher, exchange work, collaborate with students from other schools or countries, and students can also use the Internet to design their own website, and explore virtual worlds (p. 18). This view supports the need for a stronger awareness with the use of the Internet as 96 percent of teachers who are merely gathering information and images. Preparing teachers with the knowledge and awareness of what the Internet can provide in terms of pedagogical support will enhance the art classroom and expose the true potential of the Internet.

Through proper preparation with new student art teachers and current art teachers, technology can be successfully integrated into the art classrooms. In 2008 the National Educational Technology Standards (NETS) (see appendix B) were developed to provide a framework for preservice and inservice teachers to integrate technology in their classrooms efficiently (Roland, 2010, p. 18). NETS consists of 5 standards that require teachers to: (1) Facilitate and inspire students' learning and creativity, (2) Design and develop digital age learning experiences and assessments, (3) Model digital age work and learning, (4) Promote and model citizenship and responsibility, and (5) Engage in

professional growth and leadership (ISTE, 2008). These standards describe what teachers should know and what they should be able to do when educating students with the merging digital world. These standards may be applied to various subject areas including art, and because technology integration is not yet mandatory, these standards act as tools for teachers who may want to use technology in their classrooms. In a K-12 art classroom these standards can be used to build a classroom that is filled with innovated ways to learn. These 5 standards promote of the qualities a successful K-12 art classroom that integrates technology needs to be effective. Art teachers need to inspire, design, model, promote and engage information to their students in order for them to achieve success in the art classroom. These standards are similar to the National Standards for Quality Online Teaching, which can be studied and used to assess how technology can be integrated effectively in the classroom. These standards provide guidelines for teachers to follow when incorporating different types of technology in their classes. These standards are another way that K-12 art teachers can evaluate themselves with respect to their use of different methods of teaching.

Art is a subject where technology can be used to run an entire class or it can be used to present some of the information to the class. Today art is so broad that technology fills both ends of the spectrum. Some teachers, even art teachers may disagree with the power of technology, but today, there is no way to escape the technological advances in the world we inhabit. Whether a new or experienced educator, it is their responsibility to keep moving forward by making the classroom more efficient. This may not always mean the use of technology but if teachers are not taught what is

available to them as means to further enhance their classrooms, then they will never know what they can offer to their students.

Technology is not a mandatory requirement for teachers to use in the classroom. Even though technology integration is not mandatory for teachers, it is important that art teachers should be prepared in the growth and development of successful teaching. Unfortunately there is not an established path for art teachers to follow so they know what type of technology to use in the classroom, or even how it should be used. Using the National Standards for Quality Online Teaching and NETS is a strong place for art teachers to reference ways to properly begin to incorporate new teaching methods based on the advancement of technology. Any technology that is being used is developed and decided by the teacher who is actually going to use it. Following the National Online Standards will provide the art teachers with a way to evaluate themselves and assess if their changes are beneficial for the students and the K-12 art classroom. This research tells us that as of now it is better to integrate technology into the classroom with some teaching style, rather than not using technology at all. The questionnaire shows that the use of technology in a studio art classroom provides enough change to successfully engage the students in their studio work and provide a more efficient working environment. There may not be enough information currently available as to whether or not art teachers can find a successful way to use technology in every classroom environment, but speaking from my experience with the changes made to my art course and classroom, I can see a definite change in my students' ability to receive and understand the information presented to them.

My research reveals through the questionnaire in this study that a little technology change can go a long way in affecting how students will comprehend and understand information. Based on the questionnaire the use of technology makes learning more exciting, interesting, and easier for the students. Moreover, the use of technology also creates more time in the art studio classroom by allowing readings, videos, various techniques, and lesson previews to be posted online and viewed by students outside of the classroom. What was learned in this study can be applied to all K-12 art classes that the integration of technology in the classroom can improve the students' ability to learn. Preparing art teachers for integrating technology into their classrooms is something that is still being developed, and as of now it is the teachers' responsibility in deciding what is best for their own classroom. There is not a definable path as to how to successfully combine technology with K-12 art classrooms. However, through the results of this research art teachers can improve their classes with some form of technology to enhance students' learning ability and also create more time for students' to "make art" in studio classes. Art teachers need to take the first steps in accepting technology as a way to enhance their own teaching methodologies to better educate their students.

Future Implications

The art field is so diverse in the art subject that are taught that is makes it difficult to point to a specific teaching style that will allow art teachers to use a style of teaching with technology. Student art teachers are prepared and taught how to run a classroom and how to successfully teach their students. Every teacher, including art teachers, will teach their own style and this style is often created by how each student teacher was taught. According to Roland (2010), teachers "teach as they were taught," and if that is

the case, then new art teachers will be better prepared with virtual technology if they experience the ways technology can be used in the classroom during their professional training (p. 18). Teaching with this idea will only be effective if art teacher programs are incorporating new forms of technology in the classrooms. If technology is used when teaching students, then familiarity and comfort with technology will become standard in art classrooms. The responsibility to use more technology does not fall solely on the shoulders of a new art teacher candidate This responsibility is directed toward the art teacher programs to consider how, or if, the program is preparing art teacher candidates on how to educate today's students with all of the new ways of technology (Roland, 2010, p.18). It may be difficult for both novice and experienced teachers, with the vast amounts of technology available, to keep track of every-changing software, thus making it challenging to training new teacher candidates. Art teacher education programs do not need to focus on how to teach every program because even if the new student teachers know how to use some of the technological tools, they may not know how to use them effectively (Duhanney, 2012, p. 200). Art teacher education programs will be more valuable if they instruct the student teachers about how to use the technology efficiently and effectively rather than teaching specific programs. Art teachers can then decide which form of technology is will fit best in their own classroom.

The opportunity to use technology in the art classroom is a tool that should be used sooner rather than later by art teachers. Once art teachers or any type of teacher begins to understand the opportunities that are available through technology, their classrooms can begin to adapt to this change. Therefore it is important for teachers to know that they do not have to add different types of technology to their classes but

instead develop a way to infuse technology into their classroom (Roland, 2010, p. 21). Art teachers do not need to substitute a way of learning with a form of technology just because technology is available, but art teachers should be encouraged to seek out ways to make their classes better and more efficient for learning. Art teachers can set various challenges through their projects that give the students more to think about what they are creating. Wilks et al. (2012) maintains that, "Digital technologies, tools, and software are powerful avenues of learning that assist students to build and improve their visual and spatial thinking" (p. 57). Art teachers should want to build meaningful connections with the course content and the use of technology. The idea of branching out and trying new things is a great way to stimulate the brain in creative thinking. Technology has gained a general acceptance in teaching programs over the years but it is still seen as an "add-on" rather than an important part of the education system (Roland, 2010, p. 21,). The more art teachers begin to use technology as a more structured method of teaching, the quicker it will become more accepted instead of an add-on to the course.

When an art teacher decides to use technology in the classroom the art teacher must decide whether or not it is necessary to use it. Combining resources should be and can be utilized. It might be appropriate to use the Web for research, but it may also be more efficient to use an art historical textbook or even a combination of both (Roland, 2010, p. 21). An art classroom will not always have readily available state-of-the-art technology facilities to accommodate all students' needs, but that does not mean art teachers should not expose the uses of technology to students. Art teachers need to be flexible with technology and be prepared for different art classroom conditions (Roland, 2010, p. 23). Any exposure to technology is good for both the art teacher and the

students because it provides options for the learning environment. The use of technology in any K-12 art classroom can be useful as long as technology enhances the students' ability to learn. Integrating the smallest form of technology, from teaching a student in first grade how to generate a "search" to finding an idea on the Internet, or having a class post its work online for group discussions, once the integration of technology begins, the possibilities are endless for any type of K-12 art classroom.

Recommendations

Through the research gathered and the analysis of students' response to the questionnaire, it is evident that the use of technology increases the learning experience in the K-12 art classroom. Therefore, art teachers will need to begin to integrate more technology into their classrooms on their own. I recommend starting small when integrating technology in the art room and not to use too much technology in the beginning. The students will need some time to adjust to new ways they can learn. Small changes provide a smooth transition for the students and also allow them to become more comfortable with a new style of teaching. Once students gain comfort and confidence with the changes made to courses then teachers can start integrating more technology into the class.

Research supports the need to better prepare teachers in the use of technology in their art classrooms. The use of the National Standards for Quality Online Teaching and NETS (National Educational Technology Standards) provide a good foundation for K-12 art teachers and various school districts to start to build development courses that will allow teachers to learn the necessary steps for incorporating technology and virtual teaching methods to their classrooms. The lack of a mandatory requirement to use these

teaching methods in the classroom allows teachers to use technology at their own discretion. The small amount of technology that was added to my studio art classroom has proven that technology belongs in the field of art. When used effectively, technology can be used to develop an art classroom that can be incorporated into a blended classroom, as well as, provide endless possibilities for art teachers to develop creative, new, and innovated ways to teach their students and amplify their learning.

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Appendix A

Survey For Students On Changes Made To The Classroom

1. Is it helpful to see another person (video) perform certain techniques before the teacher does a demonstration?

   Not at all…not really…neutral…somewhat helpful…very helpful

2. Do you find the readings helpful for our class discussion?

   Not at all…not really…neutral…somewhat helpful…very helpful

3. Do the readings outside of the classroom help maximize work time in the classroom?

   Yes…No… Do not read them (be honest)

4. Do you like the use of a class Twitter page?

   Dislike…Some Dislike…no use of Twitter…somewhat like…like

5. Do you find the videos on the class blog helpful?

   Not at all…not really…neutral…somewhat helpful…very helpful

6. Do you find the Prezi presentations more engaging than the Power Point?

   Not at all…not really…neutral…somewhat engaging…very engaging

7. Does it matters how the information for the project is presented, via Prezi, Power Point?

   Yes or No

8. Has the changes to the class involving Prezi, the class blog, and Twitter been useful and successful so far this year?

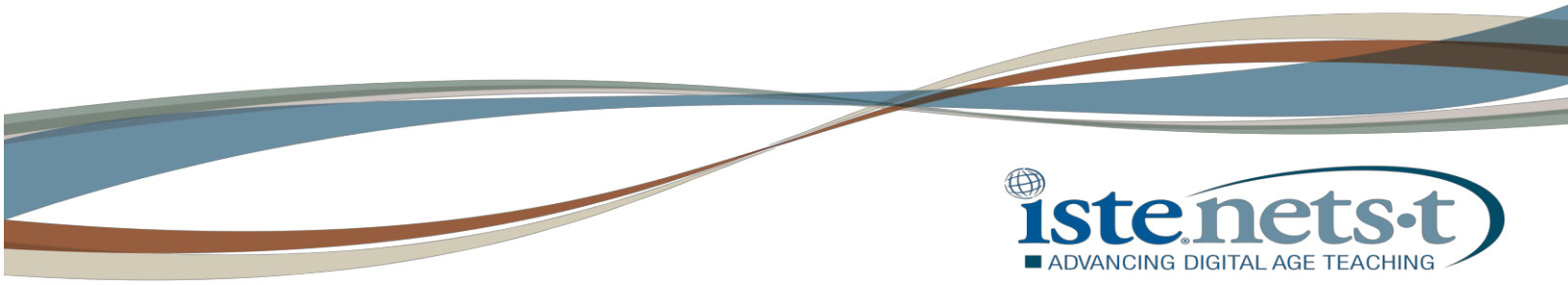
   Not at all…not really…neutral…somewhat successful…very successful

9. Would you like to see more technology integrated in the class?

   None…less…stay the same…a little more…a lot more

Appendix B:

National Educational Technology Standards



Effective teachers model and apply the NETS·S as they design, implement, and assess learning experiences to engage students and improve learning; enrich professional practice; and provide positive models for students, colleagues, and the community. All teachers should meet the following standards and performance indicators.

1. Facilitate and Inspire Student Learning and Creativity

Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments.

a. Promote, support, and model creative and innovative thinking and inventiveness
b. Engage students in exploring real-world issues and solving authentic problems using digital tools and resources
c. Promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes
d. Model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments

2. Design and Develop Digital Age Learning Experiences and Assessments

Teachers design, develop, and evaluate authentic learning experiences and assessment incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the NETS·S.

a. Design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity
b. Develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress
c. Customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources
d. Provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching

3. Model Digital Age Work and Learning

Teachers exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society.

a. Demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations
b. Collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation
c. Communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital age media and formats
d. Model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning

4. Promote and Model Digital Citizenship and Responsibility

Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices.

a. Advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources
b. Address the diverse needs of all learners by using learner-centered strategies providing equitable access to appropriate digital tools and resources
c. Promote and model digital etiquette and responsible social interactions related to the use of technology and information
d. Develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital age communication and collaboration tools

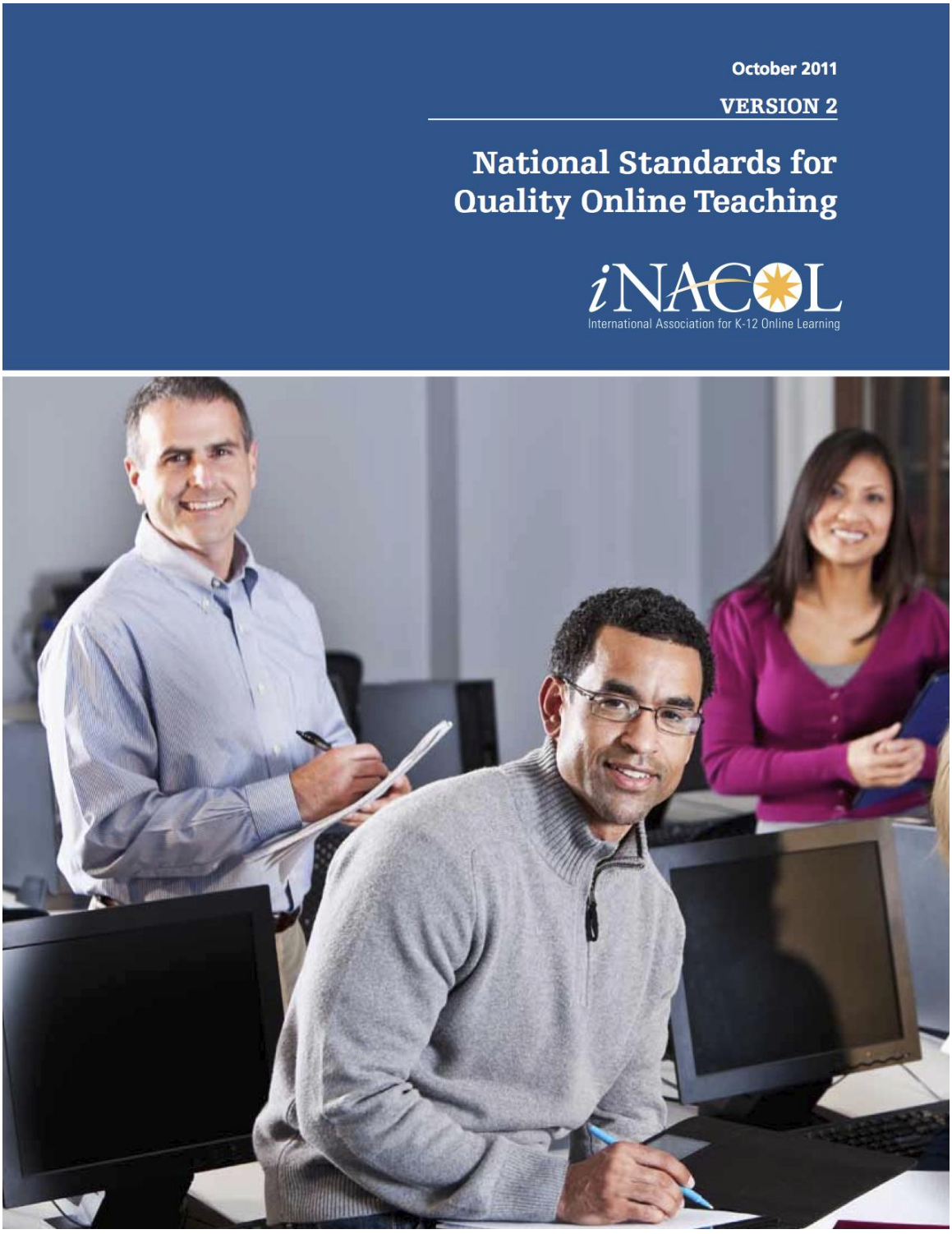
5. Engage in Professional Growth and Leadership

Teachers continuously improve their professional practice, model lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources.

a. Participate in local and global learning communities to explore creative applications of technology to improve student learning
b. Exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others
c. Evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning
d. Contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community

Appendix C:

National Standards for Online Teaching



VERSION 2

National Standards for Quality Online Teaching

October 2011

iNACOL
International Association for K-12 Online Learning

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Matthew Wicks – iNACOL

Technology should be used to better the course and not because it is available

VERSION 2

National Standards for Quality Online Teaching

First version was originally published in 2008.

Introduction

The mission of the International Association for K-12 Online Learning (iNACOL) is to ensure all students have access to a world-class education and quality online learning opportunities that prepare them for a lifetime of success. *National Standards for Quality Online Teaching* is designed to provide states, districts, online programs, and other organizations with a set of quality guidelines for online teaching.

The original initiative in Version 1 of the standards began with a thorough literature review of the existing online teaching quality standards, then conducted a cross-reference of standards, followed by a survey completed by representatives of the iNACOL network to ensure the efficacy of the standards adopted. As a result of the research review, iNACOL chose to fully endorse the work of the Southern Regional Education Board (SREB) *Standards for Quality Online Teaching and Online Teaching Evaluation for State Virtual Schools* as a comprehensive set of criteria. The standards as identified by SREB were already in use by sixteen SREB states; they proved to be the most comprehensive among those reviewed and included guidelines set forth in the other criteria from the literature review.

iNACOL organized a team of experts consisting of online teachers, professional developers, instructional designers, researchers, course developers, and administrators to review these new standards and the new literature on the topic. They determined that there was a need to refresh Version 1 of the iNACOL standards. The same process was used in developing Version 2 of the standards, in addition to having Version 1 as a starting point in the development of the new version.

Over the past three years, iNACOL has received feedback from organizations using these standards for the development of professional development and evaluation of online teachers. In this new version of the standards, the indicators have been divided between what the online teachers should know and understand and what the online teachers should be able to do for evaluation purposes.

These guidelines should be implemented and monitored by each district or organization, as they reserve the right to apply the guidelines according to the best interest of the population for which they serve.

The National Standards for Quality Online Teaching are identified on the following pages:

Rating Scale

0 Absent—component is missing
1 Unsatisfactory—needs significant improvement
2 Somewhat satisfactory—needs targeted improvements
3 Satisfactory—discretionary improvement needed
4 Very satisfactory—no improvement needed

Standard A

The online teacher knows the primary concepts and structures of effective online instruction and is able to create learning experiences to enable student success.

Teacher Knowledge and Understanding	Teacher Abilities	Rating
The online teacher knows and understands the current best practices and strategies for online teaching and learning and their implementation in online education.	The online teacher is able to apply the current best practices and strategies in online teaching to create rich and meaningful experiences for students.	
The online teacher knows and understands the role of online learning in preparing students for the global community they live in, both now and in the future.	The online teacher is able to build learner capacity for collaboration in face-to-face, blended, and online environments and encourages students to participate as global citizens.	
The online teacher knows and understands the instructional delivery continuum (e.g., fully online to blended to face-to-face).	[This indicator can only be evaluated in the context of instructor(s) having the ability to modify the course.] The online teacher is able to construct flexible, digital, and interactive learning experiences that are useful in a variety of delivery modes.	
The online teacher knows and understands the need for continuing to update academic knowledge, pedagogy, and skills.	The online teacher is able to meet the state's professional teaching standards or has academic credentials in the field in which he or she is teaching.	
The online teacher knows and understands the subject area and age group they are teaching.	The online teacher is able to provide evidence of credentials in the field of study to be taught.	
The online teacher knows and understands the professional responsibility to contribute to the effectiveness, vitality, and self-renewal of the teaching profession, as well as to their online school and community.		

Standard B

The online teacher understands and is able to use a range of technologies, both existing and emerging, that effectively support student learning and engagement in the online environment.

Teacher Knowledge and Understanding	Teacher Abilities	Rating
The online teacher knows and understands the use of an array of grade-appropriate online tools for communication, productivity, collaboration, analysis, presentation, research, and content delivery.	The online teacher is able to select and use a variety of online tools for communication, productivity, collaboration, analysis, presentation, research, and online content delivery as appropriate to the content area and student needs.	
The online teacher knows and understands the use of emerging technologies in a variety of mediums for teaching and learning, based on student needs.	The online teacher is able to effectively use and incorporate subject-specific and developmentally appropriate technologies, tools, and resources.	
The online teacher knows and understands the importance of interaction in an online course and the role of varied communication tools in supporting interaction.	The online teacher is able to use communication technologies in a variety of mediums and contexts for teaching and learning.	
The online teacher knows and understands basic troubleshooting skills and the responsibility to address basic technical issues online students may have.	The online teacher is able to apply troubleshooting skills (e.g., change passwords, download plug-ins, etc.).	
The online teacher knows and understands the need to continuously update their knowledge and skills for using the evolving technology tools that support online learning.	The online teacher is able to identify and explore new tools and test their applicability to their content areas and students.	

Standard C

The online teacher plans, designs, and incorporates strategies to encourage active learning, application, interaction, participation, and collaboration in the online environment.

Teacher Knowledge and Understanding	Teacher Abilities	Rating
The online teacher knows and understands the techniques and applications of online instructional strategies, based on current research and practice (e.g., discussion, student-directed learning, collaborative learning, lecture, project-based learning, forum, small group work).	The online teacher is able to use student-centered instructional strategies that are connected to real-world applications to engage students in learning (e.g., peer-based learning, inquiry-based activities, collaborative learning, discussion groups, self-directed learning, case studies, small group work, and guided design).	
The online teacher knows and understands the process for facilitating, monitoring, and establishing expectations for appropriate interaction among students.	The online teacher is able to facilitate and monitor appropriate interaction among students.	
The online teacher knows and understands the techniques for developing a community among the participants.	The online teacher is able to apply effective facilitation skills by creating a relationship of trust; establish consistent and reliable expectations; and support and encourage independence and creativity that promotes the development of a sense of community among the participants.	
The online teacher knows and understands the process for facilitating and monitoring online instruction groups that are goal-oriented, focused, project-based, and inquiry-oriented to promote learning through group interaction.	The online teacher is able to facilitate and monitor online instruction groups to promote learning through higher-order thinking and group interaction.	
The online teacher knows and understands techniques to adjust communications to diverse perspectives.	The online teacher is able to respond appropriately to the diverse backgrounds and learning needs of the students.	
The online teacher knows and understands differentiated instruction based on students' learning styles.	The online teacher is able to use differentiated strategies in conveying ideas and information, and is able to assist students in assimilating information to gain understanding and knowledge.	

Teacher Knowledge and Understanding	Teacher Abilities	Rating
The online teacher knows and understands techniques to create an environment that will engage, welcome, and reach each individual learner.	The online teacher is able to apply strategies for engagement in online learning environments, e.g., asking questions to stimulate discussion.	
The online teacher knows and understands the participation in an online course from a student-centered approach.	The online teacher is able to apply experiences as an online student and/or group to demonstrate the development and implementation of successful strategies for online teaching environments and to anticipate challenges and problems in the online classroom.	
The online teacher knows and understands the need to establish and maintain ongoing and frequent teacher-student interaction, student-student interaction, teacher-parent interaction, and teacher-mentor interaction.	The online teacher is able to provide a variety of ongoing and frequent teacher-student interaction, student-student interaction, and teacher-parent interaction, and teacher-mentor interaction opportunities.	

Standard D

The online teacher promotes student success through clear expectations, prompt responses, and regular feedback.

Teacher Knowledge and Understanding	Teacher Abilities	Rating
The online teacher knows and understands techniques to maintain strong and regular communication with students, using a variety of tools.	The online teacher is able to use effective communication skills with students.	
The online teacher knows and understands techniques for using appropriate communications in support of student engagement through prompt and regular feedback, and setting and communicating high expectations.	The online teacher is able to provide prompt feedback, communicate high expectations, and respect diverse talents and learning styles.	

Teacher Knowledge and Understanding	Teacher Abilities	Rating
The online teacher knows and understands the need to create and explain objectives, concepts, and learning outcomes in a clearly written, concise format and to explain the course organization to students.	The online teacher is able to provide clear definitions of objectives, concepts, and learning outcomes and the course organization to students.	
The online teacher knows and understands the need to define the terms of class interaction for both teacher and students.	The online teacher is able to establish and provide clear expectations of class interaction for both teacher and students.	
The online teacher knows and understands the need to define the assessment criteria for the course.	The online teacher is able to provide a clear explanation of the assessment criteria for the course to students.	
The online teacher knows and understands the need to provide clear expectations for teacher response time to student queries.	The online teacher is able to provide a clear explanation of the expectations of teacher response time to student queries.	
The online teacher knows and understands the need to establish criteria for appropriate online behavior for both teacher and students.	The online teacher is able to establish and implement criteria for appropriate online behavior for both teacher and students.	
The online teacher knows and understands the need for timely, constructive, personalized feedback to students about assignments and questions.	The online teacher is able to use student data to inform instruction, guide and monitor students' management of their time, monitor learner progress with available tools, and develop an intervention plan for unsuccessful learners.	
The online teacher knows and understands a variety of methods and tools to reach and engage students who are struggling.	The online teacher is able to use a variety of methods and tools to reach and engage students who are struggling.	
The online teacher knows and understands the process for aligning teacher and student expectations for the course, in general.	The online teacher is able to orient students to teacher's instructional methods and goals and invite students to provide feedback on their perceptions of how they are learning in a course.	

Standard E

The online teacher models, guides, and encourages legal, ethical, and safe behavior related to technology use.

Teacher Knowledge and Understanding	Teacher Abilities	Rating
The online teacher knows and understands the responsibilities of digital citizenship and techniques to facilitate student investigations of the legal and ethical issues related to technology and society.	The online teacher is able to establish standards for student behavior that are designed to ensure academic integrity and appropriate use of the Internet and online written communication; teach students that copyright laws are created for a reason.	
The online teacher knows and understands how the use of technology may lead to instances of academic dishonesty.	The online teacher is able to identify the risks and intervene in incidents of academic dishonesty for students.	
The online teacher knows and understands resources and techniques for implementing Acceptable Use Policies (AUP).	The online teacher is able to model and comply with intellectual property policies and fair use standards and reinforce their use with students.	
The online teacher knows and understands techniques for recognizing and addressing the inappropriate use of electronically accessed data or information.	The online teacher is able to provide resources for students related to intellectual property and plagiarism.	
The online teacher knows and understands privacy standards about other students and their posting and performance that are outlined in FERPA or other similar guidelines.	The online teacher is able to incorporate and comply with FERPA or other similar guidelines in AUP and course design and communicate privacy guidelines to students.	

Standard F

The online teacher is cognizant of the diversity of student academic needs and incorporates accommodations into the online environment.

Teacher Knowledge and Understanding	Teacher Abilities	Rating
The online teacher knows and understands legal mandates stipulated by the Americans with Disabilities Act (ADA), the Individuals with Disabilities Education Act (IDEA), the Assistive Technology Act, and Section 508 or other similar guidelines/requirements for accessibility.	The online teacher is able to monitor student progress and apply activities and tools that are relevant to the needs of all students, including those with learning or physical disabilities, in collaboration with appropriate staff or resources.	
The online teacher knows and understands that students have varied talents and skills and make appropriate accommodations designed to include all students.	The online teacher is able to address learning styles, needs for accommodations, and create multiple paths to address diverse learning styles and abilities.	
The online teacher knows and understands appropriate tools and technologies to make accommodations to meet student needs.	The online teacher is able to use appropriate tools and technologies to make accommodations to meet student needs.	
The online teacher knows and understands how adaptive/assistive technologies are used to help people who have disabilities gain access to information that might otherwise be inaccessible.	The online teacher is able to apply adaptive and assistive technologies in the online classroom where appropriate in the instruction to meet student needs.	
The online teacher knows and understands options to expand student thinking, address styles of learning, and provide avenues for enrichment or intervention.	The online teacher is able to identify students who are struggling with various learning obstacles, such as ELL or literacy issues, and apply appropriate strategies to support student thinking, address styles of learning, and provide avenues for enrichment or intervention when needed.	
The online teacher knows and understands the process for connecting with local support personnel to verify student's IEP requirements or 504 accommodations needed for student success.	The online teacher is able to communicate with the appropriate school staff regarding specific accommodations, modifications, or needs as listed in a student's IEP or 504 accommodations, and work in collaboration with others to address student needs.	
The online teacher knows and understands the diversity of student learning needs, languages, and backgrounds.	The online teacher is able to demonstrate awareness of different learning preferences, diversity, and universal design principles.	

Standard G

The online teacher demonstrates competencies in creating and implementing assessments in online learning environments in ways that ensure validity and reliability of the instruments and procedures.

Teacher Knowledge and Understanding	Teacher Abilities	Rating
The online teacher knows and understands adequate and appropriate assessment instruments to measure online learning that reflect sufficient content validity (i.e., that adequately cover the content they are designed to measure), reliability, and consistency over time.	The online teacher is able to create and implement assessments in online learning environments in ways that ensure validity and reliability of the instruments and procedures.	
The online teacher knows and understands the implementation of online assessment measures and materials in ways that ensure instrument validity and reliability.	The online teacher is able to develop and deliver assessments, projects, and assignments that meet standards-based learning goals and assess learning progress by measuring student achievement of learning goals.	
The online teacher knows and understands multiple strategies for ensuring the security of online student assessments, academic integrity, and assessment data.	The online teacher is able to implement a variety of assessments that ensure the security of student assessment data and accurate measures of student ability.	

Standard H

The online teacher develops and delivers assessments, projects, and assignments that meet standards-based learning goals and assesses learning progress by measuring student achievement of the learning goals.

Teacher Knowledge and Understanding	Teacher Abilities	Rating
The online teacher knows and understands the reach of authentic assessments (i.e., the opportunity to demonstrate understanding of acquired knowledge and skills, as opposed to testing isolated skills or retained facts) are part of the evaluation process.	The online teacher is able to apply authentic assessments as part of the evaluation process, assess student knowledge in a forum beyond traditional assessments, and monitor academic integrity with assessments.	
The online teacher knows and understands the process of continuous evaluation of students to include formative and summative assessments and student feedback, including polls and surveys that reflect student learning progress throughout the course.	The online teacher is able to create or select and implement a variety of formative and summative assessments that assess student learning progress and utilize student feedback to improve the online learning experience.	
The online teacher knows and understands the relationships between the assignments, assessments, and standards-based learning goals.	The online teacher is able to create, select, and organize the appropriate assignments and assessments, and align curricular content with associated and standards-based learning goals.	

Standard I

The online teacher demonstrates competency in using data from assessments and other data sources to modify content and to guide student learning.

Teacher Knowledge and Understanding	Teacher Abilities	Rating
The online teacher knows and understands techniques to plan individualized instruction incorporating student data.	The online teacher is able to use student data to plan instruction.	
The online teacher knows and understands how data is used to modify the content, instruction, and assessment to meet student needs.	The online teacher is able to use observational data (e.g., tracking data in electronic courses, Web logs, e-mail) to monitor course progress and effectiveness.	
The online teacher knows and understands how instruction is based on assessment data.	The online teacher is able to customize instruction, based on assessment data, in order to personalize the learning experience per student needs and performance.	
The online teacher knows and understands the importance of self-reflection or assessment of teaching effectiveness.	The online teacher is able to create opportunities for self-reflection or assessment of teaching effectiveness within the online environment (e.g., classroom assessment techniques, teacher evaluations, teacher-peer reviews).	
The online teacher knows and understands varied assessment strategies that address levels of ability through a variety of alternative interventions.	The online teacher is able to address levels of ability through a variety of alternative interventions.	
The online teacher knows and understands the use of effective learning strategies data for an individual student to formulate detail-specific changes in future instruction, based on assessment results and research study (data-driven and research-based).	The online teacher is able to evaluate instructional strategies to determine their accuracy and usefulness for presenting specific ideas and concepts.	
The online teacher knows and understands the process for maintaining records of relevant communications.		

Teacher Knowledge and Understanding	Teacher Abilities	Rating
The online teacher knows and understands effective time management strategies.	The online teacher is able to provide consistent feedback and course materials in a timely manner, and use online tool functionality to improve instructional efficiency.	
The online teacher knows and understands online course management tasks.	The online teacher is able to track student enrollments, communication logs, attendance records, etc.	
The online teacher knows and understands ways for teacher and students to assess student readiness for course content and method of delivery.	The online teacher is able to employ ways to assess student readiness for course content and method of delivery.	
The online teacher knows and understands that student success (e.g., grade, level of participation, mastery of content, completion percentage) is an important measure of teaching and course success.	The online teacher is able to employ ways for students to effectively evaluate and assess their own readiness for course content and method of delivery.	
The online teacher knows and understands the importance of student self-assessment.	The online teacher is able to create opportunities for student self-assessment within courses.	
The online teacher knows and understands the role of student empowerment in online learning.	The online teacher is able to empower students to independently define short- and long-term learning goals and monitor their personal progress.	

Standard J

The online teacher interacts in a professional, effective manner with colleagues, parents, and other members of the community to support students' success.

Teacher Knowledge and Understanding	Teacher Abilities	Rating
The online teacher knows and understands the need for professional activity and collaboration beyond school (e.g., professional learning communities) to update academic skills and knowledge and collaborate with other educators.	The online teacher is able to engage in professional development activities and collaboration beyond school.	
The online teacher knows and understands the need to coordinate learning experiences with with other adults involved in providing support to the student (e.g., parents, local school contacts, mentors) to support student learning.	The online teacher is able to provide ongoing communication with parents or guardians concerning student learning.	

Instructional Design

The following section outlines standards for instructional design skills for the online teacher of record, where applicable. These standards are considered optional, as instructional design does not always fall under online teaching responsibilities.

Standard K

The online teacher arranges media and content to help students and teachers transfer knowledge most effectively in the online environment.

Teacher Knowledge and Understanding	Rating
The online teacher knows and understands critical digital literacies and 21st century skills.	
The online teacher knows and understands appropriate use of technologies to enhance learning.	
Teacher Abilities	
The online teacher is able to modify and add content and assessment, using an online Learning Management System (LMS).	
The online teacher is able to create and modify engaging content and appropriate assessments in an online environment.	
The online teacher is able to incorporate multimedia and visual resources into an online module.	
The online teacher is able to use and incorporate subject-specific and developmentally appropriate software in an online learning module.	
The online teacher is able to review materials and Web resources for their alignment with course objectives and state and local standards and for their appropriateness on a continuing basis.	
The online teacher is able to create assignments, projects, and assessments that are aligned with students' different visual, auditory, and hands-on ways of learning.	
The online teacher is able to arrange media and content to help transfer knowledge most effectively in the online environment.	