INNOVATIVE TEACHING STRATEGIES:
TEACHING ART PHOTOGRAPHY IN THE DIGITAL WORLD

Melissa C. Partin-Harding

A Thesis
Submitted to the Graduate College of Bowling Green
State University in partial fulfillment of
the requirements for the degree of

MASTER OF EDUCATION
August 2011

Committee:
Terry L. Herman, Ed.D., Advisor
Donna K. Trautman, Ph.D.
Thomas Siebenaler M.Ed.
ABSTRACT

Terry L. Herman, Ed.D., Advisor

Visual information, technology, and the Internet are transforming the fundamental structure of education in many ways and this includes art education. Technology is a key component in today’s classroom and knowing how to use it effectively to engage today’s media savvy culture can be difficult. Students today expect technology to be an integral part of their education. The problem of this study was to identify strategies for enhancing college level art photography courses through the creative integration of technology.

The results of this study indicate that technology is an important part of education in today’s digital world. Encouraging creativity by teaching students about art and exploring art challenges them to use creativity to solve problems and conceive new ideas. As education evolves in the 21st century it will be important to integrate technology into traditional studio art courses in order to facilitate technology literacy.

A final checklist of strategies for enhancing higher education art photography courses through the creative integration of technology is presented in appendix J and includes important information regarding learning goals, learning outcomes, technology resources, and effective pedagogical integration of technology into art photography courses in higher education.
In dedication to my beautiful daughter Michaela Catherine Harding whose presence in my life was profoundly meaningful and unequivocally life altering. She is deeply loved and missed.

ACKNOWLEDGMENTS

I would like to thank my advisor Dr. Terry Herman for her dedication, patience, and encouragement, as well as my committee members Dr. Donna Trautman and Thomas Siebenaler for their guidance. I must also thank my children for having the tolerance to let me work long nights and weekends, while I pursued this degree, and my family, for their unwavering support.
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAPTER I: OVERVIEW</td>
<td>1</td>
</tr>
<tr>
<td>Context of the Problem</td>
<td>1</td>
</tr>
<tr>
<td>Problem of the Study</td>
<td>2</td>
</tr>
<tr>
<td>Objectives of the Study</td>
<td>2</td>
</tr>
<tr>
<td>Significance of the Study</td>
<td>2</td>
</tr>
<tr>
<td>Limitations and Assumptions</td>
<td>5</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>6</td>
</tr>
<tr>
<td>CHAPTER II: LITERATURE REVIEW</td>
<td>8</td>
</tr>
<tr>
<td>Introduction</td>
<td>8</td>
</tr>
<tr>
<td>How We Learn</td>
<td>8</td>
</tr>
<tr>
<td>Today’s Learners</td>
<td>9</td>
</tr>
<tr>
<td>Self-Directed Learning</td>
<td>10</td>
</tr>
<tr>
<td>Learning Digitally</td>
<td>11</td>
</tr>
<tr>
<td>Connectivism and Constructivism</td>
<td>13</td>
</tr>
<tr>
<td>Technology in Higher Education Art Courses</td>
<td>13</td>
</tr>
<tr>
<td>Case Studies</td>
<td>15</td>
</tr>
<tr>
<td>A Philosophical Inquiry</td>
<td>16</td>
</tr>
<tr>
<td>What is Being Used?</td>
<td>18</td>
</tr>
<tr>
<td>Section Summary</td>
<td>20</td>
</tr>
<tr>
<td>CHAPTER III: METHODOLOGY</td>
<td>21</td>
</tr>
<tr>
<td>Restatement of the Problem of the Study</td>
<td>21</td>
</tr>
</tbody>
</table>
Restatement of the Objectives of the Study .................................................................21
Research Design ...........................................................................................................21
Data Collection Instrument, Validity, and Reliability ................................................22
Panel Experts ..............................................................................................................23
Description ................................................................................................................23
General Characteristics of the Study Population .........................................................24
Procedures of Data Analysis .......................................................................................24
Timeline ......................................................................................................................25
Section Summary .......................................................................................................26
CHAPTER IV: FINDINGS .............................................................................................27
Introduction ................................................................................................................27
Alpha Review .............................................................................................................28
Revised Checklist Alpha Review Summary ...............................................................33
Beta Review ...............................................................................................................34
Revised Checklist Beta Review Summary .................................................................36
CHAPTER V: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS ..................39
Summary ......................................................................................................................39
Recommendations and Future Studies ......................................................................40
Final Implications ......................................................................................................41
REFERENCES .............................................................................................................42
APPENDIX A ..............................................................................................................48
APPENDIX B ..............................................................................................................49
APPENDIX C ..............................................................................................................50
CHAPTER I: OVERVIEW

Context of the Problem

Over the centuries each generation has benefited from new and innovative ideas that have changed everyday living, working, and learning. The way students learn is affected by the times in which they live, their gender, and their experiences. As our society and culture changes, the way in which students learn changes (Strauss & Corbin, 1998). The infrastructures of technology are built into the landscape of the 21st century. Visual information, technology, and the Internet are transforming the fundamental structure of education in many ways and this includes art education. Technology is a key component in today’s classroom and knowing how to use it effectively to engage today’s media savvy culture can be difficult. Faculty members are struggling to determine what types of technology will be useful for teaching and learning to a generation whose world has been inundated by a multimedia rich environment.

Many of today’s students represent the first generation to grow up with computer-based technology readily available and they have spent their lives around computers and other technologies. They count on the computer and the Internet to keep them connected in many ways, including for education (Kim, 2006). To stay competitive and meet the demands of today’s students it will be important for colleges and universities nationwide to embrace the creative integration of technology in today’s digital world (Prensky, 2001). Effective technology integration must happen across the curriculum in ways in which research shows will facilitate learning and promote information literacy skills. With these changes in student culture art education has been slower to incorporate technology into the curriculum (Burma, 2007).
Problem of the Study

The problem of this study is to identify strategies for enhancing college level art photography courses through the creative integration of technology.

Objectives of the Study

The objectives of this study included:

- To identify effective and innovative teaching strategies integrating technology into higher education visual art courses as found in current literature.
- To develop a checklist of strategies for enhancing college level art photography courses with the creative integration of technology based on the information gathered in objective one.
- To utilize an expert panel to review the checklist of strategies for criticisms and suggestion.

Significance of the Study

New technology and the Internet are providing educators with a variety of options for presenting course material in new and innovative ways. Exposure to the digital world has changed the way students take in and put out information. They have been exposed to a multimedia environment and this environment has changed the learner from a linear learner to a parallel learner (Prensky, 2001). New technology is changing the structure of education with both traditional and nontraditional students. They expect technology to be an integral part of their education and their learning experience.

Encouraging creativity by teaching students about art and exploring art challenges them to use creativity to solve problems or conceive new ideas (Metri Group, 2008). In a 2006 Time Magazine article titled, “How to bring our schools out of the 20th century,” Thomas Friedman,
Pulitzer Prize winning journalist and bestselling author of *The World is Flat*, was quoted as saying “it is interdisciplinary combinations—design and technology, mathematics and art—that produced You Tube and Google” (Wallis, Steptoe, & Miranda, 2006, p.2). Studio art courses teach skills of reflective self evaluation, willingness to experiment and learn from mistakes, task persistence, observation, envisioning, and innovation (Lavender, Nguyen-Rodriguez, & Sprujt-Metz, 2010). A conceptual age of original and creative thinkers is predicted to follow the knowledge and information age (Pink, 2006). This new era will need creative and inventive thinkers to develop unique designs in products and services that will set them apart from the competition. With this shift it will be important for college students to develop their creative and inventive thinking skills (Pink, 2006).

Today’s students are engaged, enthused, and inspired by technology. Digital Natives have acquired the skills and aptitude for using technology and media. A report conducted by Caruso and Kvavik (2005) of the technological experiences of over 18,000 university students clearly showed that technology is infused in all aspects of students’ lives. However, they also found students have a core set of technological skills, but still lack skills in specialized technological areas (Kvavik, 2005). Furthermore, there is a growing student body of nontraditional students and a highly diverse population with a wide variety of technology-based skills. A foundation for locating, evaluating, selecting, and using information is needed to further their academic work and prepare them for lifelong learning (University of Utah Visual, Information, and Technology Literacy Task Force, 2009).

Faculty members recognize the value of technology literacy in the 21st century, but they are restricted by the time it takes to re-envision a curriculum that integrates technology (University of Utah Visual, Information, and Technology Literacy Task Force, 2009). As
instructors attempt to identify what innovative technological teaching strategies engage the learner and which are effective for teaching visual art, they are facing problems and challenges. EDUCAUSE, a nonprofit association whose mission is to advance higher education by promoting the intelligent use of technology, identified the top five challenges in teaching and learning with technology (2009).

1. Creating learning environments that promote active learning, critical thinking, collaborative learning, and knowledge creation.

2. Developing 21st century literacy (information, digital, and visual) among students and faculty.

3. Reaching and engaging today’s learner.

4. Encouraging faculty adoption and innovation in teaching and learning with technology.

5. Advancing innovation in teaching and learning with technology in an era of budget cuts.

In the last decade, technology has moved us into the information age; this age has promoted science, technology, engineering, and math while the arts have been stifled (Pink, 2006). Right-brained thinkers are becoming increasingly important as we evolve through the information age into the conceptual age (Pink, 2006). The integration of technology into visual art courses is important as education evolves in the digital world and technology literacy becomes more important.

As technology becomes more and more present in education, innovative art instructors are attempting to incorporate technology into their traditional visual art courses. Many leaders in art education are engaging learners with technology in new and amazing ways. They are utilizing
technology in unique learning environments that inspire creativity and collaboration. Using technology that is designed specifically for teaching and learning is one option, but many instructors are experimenting with types of technology that are not necessarily designed for education. Synthesizing these innovative teaching practices and creating a checklist of strategies will give faculty members a resource for developing their own curriculum, which integrates technology into an art photography course. The significance of the study is in the impact technology is having on the development of traditional art education courses in the 21st century, specifically art photography.

**Limitations and Assumptions**

This study considered effective and innovative technological tools that visual art instructors are currently using to effectively engage and facilitate learning in higher education. Those that can benefit both the instructor and the learner in meeting learning outcomes in higher education visual art courses were considered. The use of technology was considered as both an alternative and a complementing teaching method.

Assumptions:

- An assumption of this study was that the published literature and case studies were legitimate and an accurate reflection of current trends and strategies.
- An assumption of this study was that the individuals on the expert panel had a sincere interest in advancing the role of technology in art photography education and responded honestly and reflectively.

Limitations:

- It is not the intention of this study to serve as a how-to guide for the use of software applications.
• The outcomes of the study for integrating technology were limited to teaching art photography in higher education.

• It was not the intention of this study to address student limitations in technological skills.

**Definition of Terms**

The following were operationally defined for the purpose of this study.

*Blended Learning* – Used to enhance and extend the traditional classroom/lecture hall/studio method of teaching (Wheeler, 2008).

*Collaborative Learning Environment* – A virtual form of learner-to-learner interaction and collaboration (So & Brush, 2007).

*Conceptual Age* – Describes the economic contribution of creativity, innovation, and design skills to economic competitiveness (Pink, 2006).

*Course Management System* – A tool that allows an instructor to post information on the web and manage a course (Meerts, 2003).

*Facilitator* – An individual who assists in the management of an exchange of ideas, information, and opinions. A facilitator is expected to offer guidance along the way, to making decisions rather than provide expertise on a particular subject ([http://www.merriam-webster.com/dictionary/facilitator](http://www.merriam-webster.com/dictionary/facilitator)).

*Information Age* – A period beginning in the last quarter of the 20th century, when information became easily accessible through computers and computer networks (Pink, 2006).

*Left-Brained Thinkers* – The left cerebral hemisphere of the human brain, which includes areas associated with numerical calculations and sequential, analytical, and logical thinking (Pink, 2006).
Media Literacy – The expansion of the conceptualization of literacy to respond to cultural participation in the 21st century and the capacity to access, analyze, evaluate, and communicate messages in wide variety of forms (http://en.wikipedia.org/wiki/Media_literacy).

Multimodal Teaching – Used to refer to a myriad of functions and conditions in which two or more different methods, processes, or forms of delivery are used (Moreno & Mayer, 2007).

Right-Brained Thinkers – The right cerebral hemisphere of the human brain, which includes areas associated with abstraction, artistic ability, and emotional response; popularly regarded as the center of creativity and imagination (Pink, 2006).

Technology – The making, usage, and knowledge of tools, techniques, systems, or methods to solve a problem or serve some purpose. Tools and machines need not be material; virtual technology such as computer software falls under this definition (http://en.wikipedia.org/wiki/Technology).

Technology Literacy – The ability to responsibly use appropriate technology to communicate; solve problems; and access, manage, integrate, evaluate, and create information to improve learning in all subject areas and to acquire lifelong knowledge and skills in the 21st century (ACRL, 2000).

Visual Art – An art form intended to be appreciated or perceived primarily by sight, such as painting, photography, printmaking, and filmmaking (http://en.wiktionary.org/wiki/visual_art).

Visual Literacy – The ability to recognize and understand ideas conveyed through visible actions or images, as well as to be able to convey new ideas or messages through imagery (Aanstoos, 2003).
CHAPTER II: LITERATURE REVIEW

Introduction

For the past 100 years education has mainly relied on the agrarian style of teaching to present information to students. As the Internet rapidly evolves as a transformative infrastructure, it is changing social practices and the way students learn and interact. Today’s students expect to be lifelong learners in the open learning environment provided by the Internet.

A number of recent writings have investigated how technology is affecting the way today’s visual and media rich culture learns, and how technological influences are compelling teachers and instructors to integrate technology and innovative teaching practices in order to engage the learner. Students and teachers are aware of the information the Internet has to offer and that knowledge empowers them. They have easy access to insurmountable amounts of information available at any time and presented in a variety of media formats. Social networking allows them to casually interact with experts, advisors, and mentors from all over the world. Instructors in all disciplines are exploring new technology to determine what is effective for teaching and learning. Understanding how technology is affecting teaching and learning is important to enhancing art education through the use of technology.

How We Learn

Our brains are malleable and research has shown that different developmental experiences and different inputs from the culture that surrounds us cause our brains to develop and think differently (Brown, 1999). Various kinds of stimulation throughout our lives constantly change the brain’s structure and reorganize the way we think. Brains learn differently depending on when, where, and how we learn. Research indicates growing up in a digital world has changed the way today’s students learn (Prensky, 2005). Exposure to multiple forms of media
during their formative years has changed them fundamentally from students in the past; they take in and put out information differently. Past generations have experienced some advances in learning and technology, but none as radically as Digital Natives: “One may even call it a ‘singularity’—an event which changes things so fundamentally that there is absolutely no going back” (Prensky, 2001, p. 1). The brains of today’s students are wired differently and they are becoming less willing and/or able to sit idly by in a passive learning environment (Prensky, 2005). The multitude of technological tools and web content available can be used to effectively facilitate teaching and learning in today’s learners (Moreno & Mayer, 2007).

**Today’s Learners**

Today’s students are learning how to filter and collect the information that is relevant to what they need to know and they take the availability of information for granted. Students today have no qualms about trying out new technology, new programs, and software (Brown & Adler, 2008).

They have easy access to interactive learning environments, they are interconnected, and they count on the computer and the computer network to connect them to information. They spend 5 to 10 hours a week of focused attention on video games, and several more hours watching television or listening to music while doing their homework or surfing the net (Brown, 1999). All of this multitasking and interactivity with technology has reorganized their brains. They are bored with the ‘sage on the stage’ teaching arrangement because their games and the Internet give them the gratification of interactivity and reward (Brown, 1999). Their brains are different because their environment is different, far different from their parents and grandparents.

John Seely Brown (1999) described a multiple set of dimensional shifts that fold in on themselves, and which are shaping the cognitive skills of today’s students. The first dimensional
shift has to do with the new literacy of information navigation. Knowing how to navigate through mountains of information and filter out what is important is a sharply developed skill of today’s student. The second dimensional shift is in self-directed learning and exploration. While self-directed learning is not new, the amount of information readily available has made finding new information a form of entertainment for the students. A third and more subtle dimension has to do with reasoning. With all the mountains of information available, the students have developed the skills to page through all that information and determine what is useful and what is legitimate. Finally, the last dimension has to do with action. The student of today doesn’t read about how to learn new technology, they just mess around until they figure it out, and if they want to learn how to do something they watch a video on YouTube of how other people are doing it and then try it themselves (Brown & Adler, 2008).

**Self-Directed Learning**

Many of today’s instructors are using computers and the Internet to guide students to useful information, problem solving, and structured learning goals. New and highly effective tools for teaching and learning are available for teachers and students. Many tools not originally intended for teaching and learning are being used effectively for education. Technology is being utilized to teach students to teach themselves, while providing them with information and guidance. Many of today’s teachers are transforming the teaching structure to better meet the self-directed learning styles of the digital student. Self-directed learning is not a new phenomenon; it is a learning style theorized for centuries, but the potential was never fully realized because the availability of learning material was limited to only the brightest and most fortunate of students (Downes, 2005). Today’s technology is the ultimate source for self-directed learning and teachers in higher education are taking on a new role as a facilitative guide. They
are using technology to facilitate a self-directed learning environment where students construct knowledge for themselves and with others. There is convincing evidence that people who engage in self-directed learning, learn more things, learn better, and retain information longer than people who sit passively by while a teacher feeds them information. In addition, self-directed learning is more in tune with our natural ability for learning (Knowles, 1975).

The main problem with self-directed learning is often times the process is not structured and a goal is not specified (Knowles, 1975). This is where today’s instructors are contributing to the development of the context to obtain the desired learning outcome. For example, instead of the teacher telling the student the information, they are giving the students structure and using technology as a tool to guide them to the information and find answers. Today’s instructors are directing the learner by giving the students a problem to solve, a question to answer, or a project to complete. The quest for information is followed with an interactive discussion session in a social network, which is then used to corroborate information discovered by all the students, and even taken to a new level of interactivity by communicating with other students from around the world. Next the instructor guides the students in the use of media to finalize and share the information or solve problems. This type of learning module is embracing the dimensional shifts of the cognitive skills of the digital student and encouraging the interactivity the students crave today (Brown, 1999).

Learning Digitally

Computer-based learning is re-structuring the learning environment by giving students the opportunity to review and learn in a variety of different ways. Researching and finding information now takes a fraction of the time it took before the infrastructure of the Internet; this makes the possibility of finding the same information in a different style accessible. The Internet
offers multiple forms of learning media that can engage a student in his or her ideal way of learning whether it is abstract, textual, visual, musical, social, or kinesthetic. Tapping into a student’s ideal learning style can build self confidence about the ability to learn and later the confidence to expand to a broader set of learning media (Brown, 1999). If something is confusing or difficult, access to a computer can allow the student to find and review the information at their own pace.

For centuries people have gathered together while making food, tools, utensils, and art. Workers gathered together at the end of the day to share stories (Brown, 1999). Each would learn from the other through the community of storytelling and creativeness. The problem was if you weren’t there to hear the story or participate in the creative process, you missed out on the information. If no one was there to write it down, the story and the lessons were lost (Brown, 1999). The Internet has transformed the community of learning environment by combining social and cognitive behavior into a multiprocessing, multiperson learning structure. Digital natives know how to use the Internet to combine social interactivity with learning to gather information and gain knowledge (Siemens, 2004).

Studio art courses provide a unique learning environment in which students learn from each other as well as the instructor. Activities within the studio guide and direct the student while the interactivities influence the student and their peers. The instructor serves to observe and guide while drawing attention to innovative ideas and approaches. The knowledge of the instructor is to inform and offer perspective on historical as well as emerging art forms. Learning through peer review and critique is integral in a studio art course and is taken to a new level as instructors integrate social interactivity with learning. At Ohio State University, Dr. Ellen Furlong developed a rubric for students to evaluate their own and their peers work. Dr. Furlong
explains. “They set a very high standard for themselves, even higher than I might have set for them.” As a result they are more engaged with their work and the quality of their work has improved overall (Manion 12, 2010).

The ability to share information is a significant factor in changing the structure of education and learning. Within a few minutes of surfing the Internet, it is clear that people are generous with the information they have and are more than willing to share their knowledge. Lectures that once were limited to a few can now be recorded and shared with the world. Information that was once scarce is now at our fingertips and this has radically changed education in the 21st century.

**Connectivism and Constructivism**

The constructivist theory developed by Jean Piaget is based on the idea that learners construct knowledge by doing and being active in the learning process. The constructivist theory places the learning process on the student and suggests that the learner should be an active participant verses a passive learner (Smith, 1997). Many face-to-face art-based courses are taught in this style and technology is the perfect tool to take this theory to another level. The constructivist model is based on the teacher acting as a facilitative guide, while the learner takes an active role in the learning process. Connectivism, developed by George Siemens, is based on the fact that technology has changed the way we live, work, and learn. The capacity to form connections within sources of information and thereby create useful information patterns is required to learn in our knowledge economy (Siemens, 2004). Constructivism and connectivism complement multimodal learning and are integral in teaching art in a digital world. The use of Internet-based applications and technology has made the transition of the structure of the traditional art courses to technology enhanced learning practical and necessary.
Technology in Higher Education Art Courses

Technology in higher education art courses is unique from other course work. Greh (1997) describes three areas that are affected.

- Art – the way it is created and displayed.
- Education – what students need to know, how they are taught, and how they learn.
- Art education – what students create, how art is created, teaching about art, integrating art in other disciplines.

The integration of technology and technology literacy into 21st century education adds another layer that is affected. In the past, multimodal learning was broadly identified as a teaching environment that uses both visual and auditory modes such as text, graphic, audio and video (Paivio, 1986). Changes and advances in the digital world has broadened multimodal learning to mean email, messaging (IM), discussion boards, online surveys, weblogs, social bookmarks, collaborative learning environments, course management systems, and synchronous and asynchronous virtual classroom lectures and activities. According to Byrom and Bingham (2001), digital technology used as instructional tools in art classes is effective because new information is received through more than one of the five senses. Reading about, hearing about, and utilizing software in an interactive experience during the same class period capitalizes on the multimodal learning experience.

There is some doubt about the effectiveness of multimedia learning however the use of multimedia in classrooms has been supported by instructors who believe that learning is promoted by the use of multimedia (Moreno & Mayer, 2007). The use of technology and the Internet allows students to have more information available to them and gives them access to multimodal learning experiences. In a survey by Malcolm Brown of Dartmouth College, students
said too much unfettered technology was bad and hindered learning, and the use of technology should not come at the expense of interaction in or out of the classroom (Brown, 2009). However, in an interview conducted by Sally Burma, students have come to expect some type of technology interaction (Burma, 2007). In addition multiple case studies demonstrated that the use of digital content in art class applications stimulated students’ learning achievements.

Case Studies

A review of a set of published experimental studies and observations in which practical results on the use of technology as it was integrated in visual art courses was conducted. A synthesis of the results that were found is compiled here.

Case study one. In a case study at the University of Cumbria, a project team studied the integration of technology in a traditional drawing class. The group intentionally chose to study a drawing class because it was an area still mainly taught with traditional practices. The team concentrated on maintaining the community of practice, the development of critical thinking, and the articulation of constructive disciplinary discourse as were stated in the traditional foundations of the course. A blended environment was used to extend and enhance the traditional course. A formative discourse that could begin outside the studio environment and continue beyond it, was initiated. Throughout the semester students were directed to upload images and given discussion questions to initiate a discourse amongst their peers in a forum. The study revealed how communication via technology was different than communication in the studio context. However, both staff and students recognized the potential for distance engagement with other courses or practitioners outside of their course. Concerns were also raised about the skills needed to adequately copy and represent their original work; however, students set up a Flickr account
that extended outside the original group. The study demonstrated that technology can benefit a traditional fine art course, but must be flexible and open (Wheeler, 2008).

**Case study two.** In a 2005 study performed by Szu Hsin Lee at several Universities in Taiwan, it was revealed that the use of digital content in a Fundamentals of Art class improved student achievements. Lee performed the study at several universities in which one group received digital content instruction and a three-dimensional visualization module and the other group received traditional instruction for the sculpture unit of the course. The group who received digital content instruction was taught with the use of an e-book, Macromedia Flash MX with a CD-Rom-based format that consisted of e-text, text-related images, two-dimensional images, three-dimensional images, PowerPoint slides, art software, and music, as well as self-test questions (Lee & Tseng, 2008). The second group was taught with the traditional textbook and handout.

An ANOVA analysis of the data collected indicated that the use of digital content in the Fundamentals of Art class produced improved achievement in the experimental group when compared to the traditional group (Lee & Tseng, 2008). Lee states digital technology is not only used to generate art lectures by the instructor, but it also helps the students improve their project creativity, develop spatial concepts from two-dimensional art to three-dimensional art, manipulate images, store and present works, self solve problems, and navigate resources through the Internet (Lee & Tseng, 2008).

**A Philosophical Inquiry**

in noting that online and offline learning events should not be understood as separate, static, and bounded learning environments, rather they must be considered social spaces (that) interpenetrate one another and/or superimpose themselves upon one another (Lefebvre, 1991; Daiello, 2005). Daiello observes that technology and the Internet have released art objects and people from traditional spatial temporal boundaries. Modeled after a traditional class, the online course has been offered since 2001. The asynchronous, virtual classroom is contained within a single website which contains readings, images, music files, and links to other sites with information relevant to the course material. Major movements and important innovations in post 1945 art and music is presented in units of study. Weekly critical thinking exercises designed to develop description, interpretation, and analysis skills are posted to discussion boards. The instructor and classmates respond to the posts. Essays and exams are submitted electronically. Real-life attendance at an art exhibit and a music performance are also required as a basis for a required critical essay.

Daiello reflects on her personal evaluation as the instructor of the online course Art and Music since 1945. In her observations she notes the students’ controlled review of images and the flexibility of the mode of presentation by providing links to outside sources. Her initial reservations about missing out on the real classroom experience were replaced by the unique characteristics of the online experience. Daiello observed a notable difference between a face-to-face classroom and the virtual classroom discussion. The difficulty was in reading and understanding the students’ gestures and tone when analyzing their personal experience and connection to the artwork. Consequently Daiello utilized a personal essay as a vessel for students to disclose their personal interpretation of the artwork which seemed to encourage a frankness that was different than a traditional classroom. Discussions surrounding artwork interpretation
typically ended at the end of a traditional class, but often continued for days on the electronic discussion board. In addition, it was observed the role of instructor seemed more like a mentor or facilitator.

Daiello’s systematic review of literature and personal experience and the identification of connections and relationships in teaching the undergraduate online course Art and Music Since 1945 suggest that the online arts education classroom challenges the traditional classroom limitations of time and space, and fosters a personalized interpretation of aesthetics and arts learning experience (Daiello, 2005).

What is Being Used?

Leaders in emerging art technology education are using a variety of strategies to capitalize on new technology for teaching and learning.

The Studio Art School in the United Kingdom provides a nationally accredited art and design course online. The course is entirely web-based. Students and teachers share and deliver information through an online studio. Art work is photographically documented and uploaded to the virtual studio at various phases of development. One of the main disadvantages is in the face-to-face interaction among peers and instructors; however, the advantage is in being less distracted by peers (Stewart, 2001).

Social media has been used to corroborate the art installation project, Pinwheels for Peace. The art installation project was started in 2005 by two art teachers. The first Pinwheels for Peace were installed on September 21, 2005 and have grown from 500,000 in the first year to three and a half million in 2010 (Ayers & McMillan, 2011).

Second Life, a virtual learning environment, is used for creativity, socializing, self expression, and learning. Avatars are created which are maneuvered through a real-time 3D
environment (Burma, 2007). Art education classrooms are setting up virtual classrooms, museums, and galleries for students to interact. Tanisha Jackson, a graduate teaching associate in art education, uses Second Life as an online virtual space to explore identity and community. Students use self reflection and creativity to build an avatar, which they use to conduct interviews with other people in Second Life. Jackson says “the assignment gives students the opportunity to really engage with the concept of identify and how it is connected to a person’s physical appearance and their relationship to particular communities” (Manion.12, 2010).

Students are already using social networking and now instructors are creating a customized page for students to become fans. Students and instructors can monitor the page for comments and questions as well as interact and discuss assignments and course content. Instructors are directing the students to You Tube videos and creating invitations and RSVPs for meetings and events. When the class ends, instructors can end the connection.

Instructors are using texting apps to determine understanding of subjects and to take polls and discuss topics. Classrooms are using text messaging to stream anonymous answers to questions, which is proving conducive to a collaborative learning environment (Glass, 2010).

A variety of applications are available for teaching and learning with iPods and iPads including note taking applications that allow students to synch audio and text as well as add pictures, web clips, and hand written figures and notes, which can then be exported and transferred across devices. Applications that include the capability of drawing and annotating screenshots of a webpage provide feedback on student work which can be shared with multiple contributors and through email for collaborative learning. Speaking applications allow students to copy emails, PDF files, web pages, and more and have the content spoken back or copy audio
files to text and share the content via email. Notes can be exported and transferred across devices (Apple Computer, 2002).

Jean Mills created a podcast tour of the museum of modern art (MOMA) for introductory students. Students can download the tour and then visit the museum in person or online. Learn Out Loud is an online audio and video learning source that provides a variety of educational podcasts including “Magnum Stories,” a video podcast which gives a behind the scenes view of documentary photography.

Section Summary

Today’s teachers are restructuring the learning environment to meet the demands of computer-based technological world and to develop the student’s skills of inquiry, creativeness, and inventiveness. Incorporating technology into student art courses will complement the skills learned in traditional studio art courses by developing critical thinking, communication, social, and computer skills for solving real world problems. Today’s instructors are integrating computers, technology, and the Internet as a source for knowledge and for building skills in retrieving information and solving real-world problems. Student learning styles have changed and their creativity needs to be encouraged and developed. Teachers are taking on a new role in teaching, especially in higher education. Instead of just feeding information to their students they are also acting as a facilitative guide who directs them in their own personal and self-directed learning style. Creativity is nurtured through the teaching of art. Including art as part of the core college curriculum is as important as reading, writing, math, and science. Integrating technology into art education is crucial in today’s technological learning environment. Education in art is increasingly important as the demand for creativity and inventiveness continues to rise. Using technology to compliment traditional art courses is fundamental in the evolution of art education.
CHAPTER III: METHODOLOGY

Restatement of the Problem of the Study

The problem of this study was to identify strategies for enhancing college level art photography courses through the creative integration of technology.

Restatement of the Objectives of the Study

The objectives of this study include:

- To identify effective and innovative teaching strategies integrating technology into higher education visual art courses as found in current literature.
- To develop a checklist of strategies for enhancing college level art photography courses with the creative integration of technology based on the information gathered in objective one.
- To utilize an expert panel to review the checklist of strategies for criticisms and suggestions.

Research Design

The methodology used to design and develop a checklist of strategies for evaluating and implementing innovative technological teaching strategies for teaching art photography in the digital world was action research. Action research is an inquiry to improve the quality of a given educational setting (Taylor, 2002). Research data can be qualitative, quantitative, or both and is directly related to the subject. Qualitative data is used to provide a detailed description of the research topic. Quantitative data is used to collect figures and construct statistical models to describe the research (Research Methods, n.d.). Action research with qualitative data can be used to serve as a guide to general trends and is often used to collect data, diagnose problems, search for solutions, take action on promising possibilities, and monitor how the action worked.
(Ferrence, 2000). The term problem in the context of action research refers to the desire to perform change. To perform changes in desired ways, action must be guided by purpose and information (Ferrence, 2000).

**Data Collection Instrument, Validity, and Reliability**

Data was collected through the research of existing evidence, three published case studies, and philosophical inquiries. Published case studies were used to emphasize the comprehensive related investigation of the potential of integrating technology into visual art courses and the relationships to current thinking and pedagogy. Literature on technology in higher education indicated the important role of technology in the learning process of students in the 21st century. The research and case studies were synthesized and compiled in the literature review, which was referred to as the baseline for the first draft of the checklist of strategies for enhancing college level art photography courses with the creative integration of technology. Instructional goals and learning outcomes for a basic art photography course were generated by the photography department faculty members at a 2-year college as they successfully achieved accreditation by the Ohio Board of Regents for an Associate of Applied Science, Commercial Photography Technology degree, and were referred to as the baseline for the first draft of the checklist. Jean Piaget’s Constructivist learning theory supports active learning and George Siemens’ Connectivism learning theory supports technology integrated learning strategies, both of which influenced the strategies integrated in the model.

The final phase of the methodology was an expert panel’s alpha/beta iterative review process of the checklist. Expert panels are often used to generate ideas and extend the thinking behind proposals or to improve technical features of program initiatives (OERL, 2011). The
primary purpose of the expert panel was to understand what the experts would characterize as ideal strategies for the creative integration of technology in an art photography course.

Five panel experts were asked to evaluate the strengths and weakness of the checklist of strategies and provide feedback and suggestions for improvement. All participants had extensive professional experience in the field of art and education, while each brought a unique perspective to the reviews. The findings of their evaluations were drawn on for modifications to the checklist and are discussed in detail in Chapter IV.

Panel Experts

The five expert panel members who all have unique roles in higher education art instruction were approached through a formal textual electronic request (Appendix A). The five expert panel members agreed in writing to participate in the checklist review and evaluation. All have a background in art with varied expertise in teaching, managing, and learning design. All have masters degrees. Each brought a unique perspective to the review.

1. Panel Expert 1… Instructional designer and photography instructor in the college of art at a 4-year University.
2. Panel Expert 2… Chair of an art program at a 2-year college with a background in art and art education.
3. Panel Expert 3… Chair of an art program at a 2-year college with an art background.
4. Panel Expert 4… Art photography instructor at a 4-year university in the college of art.
5. Panel Expert 5… Photography professor at a 2-year college.

Description
This study began with an assessment of how technology is affecting the way our students learn and how teachers need to utilize the power of the Internet and technology to engage the multi processing, parallel learners of today. Within the context of this information it was determined that online teaching strategies could be applied to traditional face-to-face art courses as well blended courses and distance education courses. With the advances in technology it was determined that modern teaching and traditional learning practices can overlap, inform, and complement each other. Technology can complement traditional course structure, but can also cross the boundaries for online and blended course structure. An interest in art inspired further research in the importance of nurturing creative skills in the digital age and the slow implementation of technology in visual art course options in higher education.

A list of key elements necessary for maintaining the standards established in a traditional art photography course experience were central, as well as discussing and determining how that standard would be maintained and complemented by utilizing technology and the Internet. A different or unique experience is recognized as a legitimate learning experience that can be meaningful and productive for the learner.

**General Characteristics of the Study Population**

The study population is focused on higher education students and faculty. The idea of the study was to develop an informative tour of information that can be used to integrate innovative technological teaching strategies for the purpose of enhancing college level art photography courses. A checklist of strategies for teaching higher level art photography courses through the creative integration of technology was developed. The study population is assumed to have core knowledge of technology.

** Procedures of Data Analysis**
Expert panel members were contacted and reminded of the requirements as a participant (APPENDIX B). Expert panel members were then presented with an electronic form of the first draft of the checklist of strategies for the creative integration of technology in art photography courses (APPENDIX C). An electronic evaluation form containing eight semi-structured questions was presented to the expert panel members for review of the checklist (APPENDIX D).

Comments, suggestions, and feedback were compiled and analyzed. The findings are presented in Chapter IV as well as APPENDIX E. The comments and suggestions from the alpha review were used to revise the first draft of the checklist of strategies. Expert panel members were contacted for the beta review (APPENDIX F). The checklist was revised and resubmitted in electronic form and is presented with a summary of the revisions in APPENDIX G. The expert panel members were provided a beta evaluation form which contained a second set of semi-structured questions (APPENDIX H). The compilation summary of findings from the second review is also presented in Chapter IV and copies of verbatim responses to the beta evaluation form are presented in APPENDIX I.

**Timeline**

- April 2010 – Select Chair and Committee
- October 2010 - February 2011 – Develop Material for Proposal
- January 2011 – Thesis Proposal
- January 2011 – Submit Application for spring 2011 Graduation
- February 2011 – Thesis Revision and Re-Proposal
- February - April 2011 – Data Collection Analysis/Develop Chapter 4
- April 2011 – Develop Chapter 5
May 2011 – Thesis Defense/Technical Editor Review

June 2011 – Completed Error-proof Copy of Thesis Submitted

August 2011 – Graduation

Section Summary

A checklist of Strategies for Enhancing Higher Education Art Photography Courses Through the Creative Integration of Technology was created for this study and was the result of examining and evaluating published research and published case studies that relate to utilizing technology for teaching art photography in higher education. Observation and documentation of an Associate of Applied Science in commercial photography degree accreditation process played a key role in the development of the original instructional goals and learning outcomes. The analysis of the research provided a basis of direction to plan and create instructional design for an art photography course which creatively integrates technology to complement and enhance a traditional art photography course. The design was reviewed by five expert panel members in an alpha beta review and revised multiple times based on their feedback and constructive criticisms, which ultimately led to the final checklist presented in APPENDIX J. The expert panel members’ findings and responses are presented in detail in the appendix as well as summarized in Chapter IV.
CHAPTER IV: FINDINGS

Introduction

The intent of the study was to develop a checklist of strategies for integrating innovative teaching strategies into art photography courses. The original learning outcomes for the first draft of the checklist for a basic art photography course were generated by the faculty members of a photography program at a 2-year college. The researcher observed and documented the progression of the development of these learning outcomes during an Ohio Board of Regents accreditation process. An Associate of Applied Science in commercial photography degree accreditation was successfully achieved. The original technology integrated teaching strategies in the first draft of the checklist were developed based on a review of current literature, published case studies, and the expectations of today’s digital students. The original headings were developed from a compilation of the research, a review of the literature, the learning outcomes, and the case studies. The constructivist theory by Jean Piaget and the connectivism theory by George Siemens were integral in the development of the first draft of the checklist.

The final phase of the methodology was an expert panel’s alpha/beta iterative review process of the checklist. Expert panels are often used to generate ideas and extend the thinking behind proposals or to improve technical features of program initiatives (OERL, 2011). The primary purpose of the expert panel was to understand what the experts would characterize as ideal strategies for the creative integration of technology in art photography courses.

An expert panel was utilized to review the checklist in an alpha beta iterative and provide recommendations for moving forward. Five panel experts evaluated the strengths and weakness of the checklist of strategies and provided feedback and suggestions for revisions and improvement. All participants had extensive professional experience in the field of art and
education, while each brought a unique perspective to the reviews. The findings of their evaluations were drawn on for modifications, expansion, and the additions to the checklist. A synthesis of the expert panel members responses to the evaluation forms are presented below.

**Alpha Review**

Question 1: Please describe your general impression of the Checklist of Strategies for the Creative Integration of Technology in an Art Photography Course in Higher Education.

Findings: The presentation of information was well received and several expert panel members agreed the methods for using technology could enhance the classroom experience. One expert panel member noted that students expect technology to be part of their learning experience and all agreed this is the direction education is going. One thought it served as a starting point for general discussions on technology in and out of the classroom and another thought the ideas were strong and innovative. Another noted that it demonstrated an understanding of variations in learning styles and access to resources. One expert was concerned with the lack of detail or focuses on strategies and felt that more detail on the practice of using the tools that were suggested was needed. One liked the idea of using the course management software Blackboard to store examples and information for students to access. Another expert panel member questioned cost estimates and suggested including a funding model. Suggestions were given to include requirements for regular one-on-one student instructor interaction as a best practice and examples of programs or schools that have used technology as an approach to teaching art. All of the experts thought the checklist would be very time consuming to carry out.

Question 2: Were you able to easily identify and understand the learning outcomes and the technology integrated teaching strategies?
Findings: All of the expert panel members clearly understood the learning outcomes. One expert panel member voiced concerns about simply listing available tools and felt best practices were not identified. Another felt that the learning outcomes were not written in the correct format. This expert panel member made note of past experience in writing learning outcomes and advised the learning outcomes were more like instructional goals because they related to the strategies. It was noted that the goals were to deliver the content and the technology was meant to facilitate student learning. Suggestions were given to change the current learning outcomes to instructional goals and add an additional list of learning outcomes that more closely met the correct standards. A suggestion was also made to recommend strategies for dealing with student questions and for presenting information. Additionally, expert panel members felt that more clearly identifying strategies in the checklist and providing more information on each of the applications/technologies in the appendix could help another instructor prepare a course. One thought the electronic portfolio learning goal was too advanced for a beginning course and wanted to know more specifically the type of student this checklist would be directed toward. One expert panel member questioned how the outcomes were determined and if they were unique to this proposal. This expert also felt some of the outcomes were geared toward core competencies, specifically outcome two (problem solving skills) and outcome three (critical thinking), and suggested the outcomes statements should be rewritten to be more photography specific.

Question 3: Do the learning outcomes and the technology integrated teaching strategies found in the checklist accurately reflect the criteria necessary for evolving an art photography course into the 21st century by building information, media, and technology skills?
Findings: Expert panel members felt that the document accurately reflected the learning outcomes and tools needed to begin identifying what would be strategies in a course of this kind and would add another layer to an art photography course. The expert panel members agreed that the strategies were relevant because students are living in a virtual world and they expect more virtual support in their classroom experiences. One expert thought the only difference between traditional teaching practices and some of the suggested technology integrated teaching strategies was in the accessibility, and recommended addressing mobile computing. Another expert thought the use of a Wiki was too outdated, but Blackboard should be used instead. It was also noted by this expert that Twitter, LinkedIn, and blogs enhance employment and build professional connections, and Second Life might be an interesting technological tool for an idea like this (because it could be a virtual classroom and have a virtual art gallery).

Question 4: What aspects of the learning outcomes and technology integrated teaching strategies would you consider using or not using and why?

Findings: Some of the expert panel members felt they would use all of the learning outcomes and teaching strategies. One noted that the tools would reinforce the learning process and another felt they supported the idea of student engagements and active learning as well as basic information literacy. One expert panel member admitted that social media in the classroom was not as appealing because of personal preference, but recognized the significance of it as a means of communication, and conceded its importance if used effectively. One panel member thought virtual office hours were impractical, while another supported the idea. Another felt that instant messaging was too invasive and blurred the line between personal and professional time, and currently used Facebook, but only “friended” students after the teacher/student relationship had ended. One expert panel member adamantly objected to the misuse of the term best practices
and felt the current checklist identified learning outcomes and technology tool strategies, but did not constitute pedagogical best practices.

Question 5: In your opinion would an instructor be able to implement these learning outcomes and technology integrated teaching strategies? Why or why not?

Findings: Expert panel members felt that an instructor would be able to implement the learning outcomes and the technology integrated teaching strategies, but some warned that instructors should be selective and discerning in the use of these tools. Three of the five panel members reiterated considerable concern about the time commitment for integrating the strategies. One thought because the technology existed, it could be implemented. Another repeated concerns about the cost and felt a funding model for each of the outcomes would be necessary to implement the checklist as well as funding solutions and examples of institutions that have implemented these types of technologies. In addition, studies on the effect of augmenting these types of strategies, including cost manageability, and overall ability of students and faculty in the use of these strategies were suggested.

Question 6: What are the overall strengths of the checklist?

Findings: The expert panel felt that the checklist provided a direct list of current technology tools available for the integration of technology into an art photography course, accurately coupled with valuable learning outcomes. Keeping up with how the next generation is learning, communicating, marketing, and sharing information was noted as important, and the strength of the checklist was in bringing awareness to those trends. One thought the checklist could be used to begin an internal dialog about what types of technology works best to facilitate learning. Three of the five expert panel members welcomed the concept as a conversation starter.
on the use of technology in a course of this kind, while another wrote the ideas were clear, well thought out, and innovative, and would enhance an art photography program.

Question 7: What are the overall weaknesses of the checklist?

Findings: One expert panel member reiterated concerns with the use of the best practices and felt the checklist goals were daunting and intimidating and believed the strategies would take years to create without a clearer understanding of strategies or proper instructional design and technology training. Another expert panel member thought the strategies were not specifically linked to individual learning outcomes and many of the strategies could be applied to numerous learning outcomes. One warned that technology can get in the way of teaching and can become a hindrance in the learning process if not used in moderation. One expert pointed out that the checklist would need to be continually updated because technology changes so rapidly. Another thought that many of the strategies were simply alternative ways of presenting traditional course material and the use of technology should enhance the class rather than perpetuate what is already happening. In addition this expert thought a virtual darkroom would reinforce basic concepts and promote deep learning. One proposed the checklist should be more detailed, specifically regarding cost estimates and funding solutions.

Question 8: Are there any additional suggestions or recommendations you would make concerning any aspect of the checklist?

Findings: One panel member felt that offering access to information through podcasts would deter them from attending class and students may not access them at all if used as a supplement. Concern was also voiced in the use of “state of the art” because technology changes rapidly, and one speculated that it might not be worthwhile to learn new software for course presentation options. On the other hand this expert acknowledges the advantages of the Internet
and the spontaneity it allows for lectures and discussions, and was confident that mobile computing will soon be integral in a college course. Another panel member recommended removing “best practices” from the title and replacing it with “strategies.” Another pointed out that in an art class, qualitative subjective aspects that are so important to being an artist are nearly impossible to put into quantitative language and quantitative assessment data. Gathering data on the progression of artistic expression and personal growth will be especially difficult to assess, but acknowledged that a blog was a constructive method for developing artistic vision. One noted that a course of this type should be about enhancing the understanding of the discipline, but becoming familiar with social networking, websites, and electronic portfolios will help the students become more employable.

Revised Checklist Alpha Review Summary

Many useful structured and substantive ideas were provided by the expert panelists in the alpha review process. The checklist was revised based on several of the comments and suggestion. In order to more closely represent the function of the checklist, the formal title was changed to Strategies for Enhancing Higher Education Art Photography Courses Through the Creative Integration of Technology. In response to several expert panel members concerns with the time investment necessary for implementing these strategies, it was determined that integrating the strategies in small increments over several semesters in several art photography courses would ultimately propel an art photography course of this kind into the 21st century.

The checklist was revised to include two additional columns. One column was added to include a correctly structured list of learning outcomes. The original learning outcomes column was revised and renamed “learning goals,” as was recommended by one expert panel member. Under the column labeled technology integrated teaching strategies, the strategies were re-
structured and the listing of specific and/or brand name software was eliminated. This column was simplified in order to make the strategies more universal and relevant to a variety of technology resources and to prolong the relevance of the checklist as software and technology evolve. The suggested appendix of software applications and their uses was determined to be irrelevant for the newly structured checklist, and is addressed in the limitations of the study section. Recommended definitions are included in the definition of terms section. Another column was added to highlight strategies for effectively integrating the technological tools, as was strongly recommended by one expert panel member. Six strategies for the effective integration of technology were identified and incorporated with the six learning outcomes, learning goals, and technology integrated teaching strategies. The strategies are intended to cross over and complement the learning outcomes, learning goals, and technology integrated teaching strategies. The recommendation for the inclusion of examples from other institutions that have implemented technology into a course of this type was researched and reported in the literature review section.

**Beta Review**

The revised checklist (Appendix F) and a beta review evaluation form (Appendix G) were resubmitted to the expert panel for the beta review process.

**Question 1:** Does the revised title; “Strategies for Enhancing Higher Education Art Photography Courses Through the Creative Integration of Technology,” more closely represent the intention of the checklist?

**Findings:** Four of the five expert panel members agree that the revised title more closely represents the intention of the checklist. One suggested “through the integration of learning communities” as a title.
Question 2: In your opinion do the revisions to the learning goals column and the addition of the learning outcomes column add to the utility of the checklist?

Findings: The entire expert panel felt the revisions improved the utility of the checklist and one felt the revisions allowed for more focus and purpose. Another felt a measurable outcome in the form of a grade, a test, or a self evaluation to indicate the goal has been met would be a plus.

Question 3: Did the restructuring of the technology integrated teaching strategies column and the removal of specific software applications improve the checklist?

Findings: Three expert panel members felt the restructuring and removal of specific software application improved the checklist, and made the checklist more universal. One did not comment. One stated the restructured technology integrated teaching strategies were measurable and made them more meaningful in curriculum design. One recommended changing the heading in column three to Technology Resources, and the heading in column four to Effective Pedagogical Integration of Technology.

Question 4: Does the restructured focus and addition of strategies for the effective integration of technology add to the utility of the checklist?

Findings: One expert believed the revised checklist was more pragmatic, and two thought the new version was clearer and better organized. One felt the additional strategies added to the utility of the checklist. One felt the checklist gave direction.

Question 5: What is your general impression of the revised checklist?

Findings: Two expert panel members believed the checklist was a useful tool for higher education art photography instructors who have not realized the impact technology can have when supplementing current curriculum and one felt it would be useful for a blended or online...
course. Another thought it was more robust and better organized. One commented that it had an improved workflow. One felt the checklist was improved.

**Question 6: Do you have any comments or recommendations for moving forward with the checklist?**

**Findings:** One member felt the outcomes were measurable and could provide students with a sense of deep learning. One expert panel member had several questions, including faculty and student training in the use of the technology tools, and felt training would be a vital component in making the checklist a viable instructional tool. Concerns about time investment were also reiterated. This expert also asked if the selection of the type of computer would affect the ability of the students and faculty to successfully implement the technology. This expert panel member recommended including a glossary of terms to avoid confusion for those faculty unfamiliar with these terms. This expert panel member also recommended the exploration of strategies for implementing these strategies in institutions with limited resources since budgets for educational institutions are currently in turmoil and warned this could be a common problem. One felt the outcomes section should be in a language that can have an answer that is measurable. The measure should be quantitative to reflect the standards of technical proficiency, composition, etc that we know shows growth.

**Revised Checklist Beta Review Summary**

The expert panel beta review process was used to gather additional feedback on the revised checklist. Many useful structured and substantive ideas were provided by the expert panelists. The checklist was revised based on several of the comments and suggestions. Their ideas were addressed and incorporated into the revised version of the checklist while some were previously addressed in other sections of the thesis.
The revised title of the checklist, “Strategies for Enhancing Higher Education Art Photography Courses Through the Creative Integration of Technology,” was well received by four of the five expert panel committee members in the beta review. It was determined the suggestion to include “through the creative integration of learning communities” in the title did not represent the intention or scope of the checklist accurately.

It was determined that the type of computer operating system was irrelevant in the application of the strategies. Many technologies are available for both PC and Mac computer operating systems and it would be up to the discretion of the instructor to determine their individual needs. Suggestions for training development were considered and are addressed in the limitations of the study and in the strategies for effectively integrating technology. One strategy recommends the instructor give clear direction for participating in virtual learning environment and the suggestion for keeping technology simple to avoid hindering learning outcomes is included in the final version of the checklist, which addressed one expert’s concerns. Technology training for faculty members is continuing to be addressed in colleges and universities and many are offering free training. In addition, learning modules are often provided for the use of a variety of technological teaching tools. Funding concerns were determined to be too broad for the scope of this study and are recommended for future studies, although it should be taken into consideration that many web 2.0 learning tools are free. A determination of the benefits of teaching art photography with the integration of technology was too broad for the scope of this study; however, numerous studies have shown delivery mechanism of the material presented did not change outcomes of learning dramatically (Heinich, Molenda, & Russell, 1993) The language of the learning outcomes was revised to address concerns on measurable outcomes and
the heading of columns three and four were revised to more closely represent the information presented.
CHAPTER V: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The problem of this study was to identify strategies for enhancing college level art photography courses through the creative integration of technology. Three objectives were identified to address the problem of the study.

Objective 1: To identify effective and innovative teaching strategies integrating technology into higher education visual art courses as found in current literature.

To identify effective and innovative teaching strategies integrating technology into higher education visual art courses, a literature review was completed on the background of how education is evolving in the 21st century. A review of a set of published experimental case studies and observations in which practical results on the use of technology as it was integrated in visual art courses was conducted. Information and research gathered from current literature and published case studies were synthesized in the literature review. Observation and documentation of the development of learning outcomes during the successful accreditation of an Associate of Applied Science degree at a 2-year college were implemented as part of the first and second and third drafts of the checklist.

Objective 2: To develop a checklist of strategies for enhancing college level art photography courses with the creative integration of technology based on the information gathered in objective one.

A checklist of strategies for enhancing college level art photography courses with the creative integration of technology was developed from the information gathered in the literature review and the review of three published case studies as well as the information gathered from the accredited learning outcomes from a photography program at a 2-year college.
Objective 3: To utilize an expert panel to review the checklist of strategies for criticisms and suggestions.

A checklist of strategies for enhancing college level art photography courses through the creative integration of technology was developed from the information provided in the preceding chapter and reviewed by five expert panel members. The checklist was revised based on the alpha review. The checklist was revised, re-titled, and resubmitted to the expert panel for a beta review. The checklist was revised based on the beta review. The checklist was finalized based on the alpha/beta iterative review.

Recommendations and Future Studies

The following recommendations are made based on the research and development of the checklist.

1. In order to alleviate time investment concerns it was determined that integrating the strategies in small increments over several semesters in several art photography courses would ultimately propel an art photography course of this kind into the 21st century.

2. Future studies should be conducted to synthesize and develop a time line and step-by-step implementation strategies and procedures for integrating technology into an art photography course.

3. A future study should be conducted to determine if a training program for both students and faculty is necessary to implement technology into an art photography course.

4. A future study should be conducted to determine if learning about art photography with the creative integration of technology is beneficial.
5. The checklist should be revised every few years as technology advances and changes.

6. The recommendations for the inclusion of a funding model and the investigation into funding options for integrating technology into an art photography course was determined to be too broad for this study and is recommended for future studies in this field.

**Final Implications**

As technology becomes ever present in our lives it is clear that students expect technology to be part of their education. Integrating technology into the course curriculum as part of the teaching and learning process is necessary for propelling a course of this kind into the 21st century. The checklist was created through research, including the examination of published case studies and an accreditation process, as well as an expert panel alpha/beta iterative review process. The finalized checklist provides a basis of direction for learning designers and instructors to create instructional design for the implementation of technology into higher education art photography courses.

Current and future photography instructors can refer to the checklist to establish learning goals and learning outcomes for an art photography course. The technology integrated resources should be utilized as a starting point for bringing technology into a traditional art photography studio course. The strategies for effective pedagogical integration of technological tools should be referred to for setting guidelines. The final checklist titled “Strategies for Enhancing Higher Education Art Photography Courses Through the Creative Integration of Technology” is presented in APPENDIX J.
REFERENCES


http://www.computer.org/portal/web/csdl/doi/10.1109/AIPR.2003.1284270


Apple Computer. (2002, April). The impact of technology on student achievement. A summary of research findings on technology’s impact in the classroom. Retrieved from
http://www.apple.com/education/research

http://www.pinwheelsforpeace.com/pinwheelsforpeace/home.html

http://serendip.brynmawr.edu/sci_edu/seelybrown/

http://webpages.csus.edu/~sac43949/PDFs/minds_on_fire.pdf

http://www.educause.edu/EDUCAUSE+Review/EDUCAUSEReviewMagazineVolume44/LearningandTechnologyInThatOrd/174198


http://cstw.osu.edu/blog/writing-across-curriculum-tip-sp-2010-best-practices-using-technology-teach-writing


APPENDIX A

Hello Expert Panel Member,

I am in the final phase of developing a thesis. The title is *Innovative Teaching Strategies: Teaching Art Photography in the Digital World*. I have done extensive research on what is being used in art programs across the country and how students today expect technology to be part of their education experience. I am now developing a checklist for enhancing a college level art photography class through the creative integration of technology.

I am reaching out to five expert panel members to review the checklist and give feedback in an alpha, beta methodology.

Would you be interested in participating as one of the expert panel members? If you agree you would be asked to...

1. Review an electronic version of the checklist and answer a semi-structured questionnaire, which you would return electronically.

2. Re-review a revised electronic version of the checklist based on the feedback and suggestions from you and four other expert panel members and answer a semi-structured questionnaire, which would also be returned electronically.

If you are interested in participating please contact me as soon as possible.

Thanks again for your time.

Melissa
Hello Expert Panel Member,

Thank you once again for agreeing to be a member of an expert panel for the development of a checklist to enhance college level art photography courses through the creative integration of technology.

Attached you will find an electronic version of the checklist. In order to provide you a framework with which to respond, the first two pages of the document include a mission statement, a philosophical statement, a foundation overview, and a statement regarding learning outcomes followed by the checklist.

Attached as a separate document you will find a semi-structured evaluation form.

Please review the checklist and respond to the evaluation form. Completed documents should be returned to me electronically as soon as possible.

Feel free to contact me by phone or email if you have any questions or concerns.

Thanks again,

Melissa
APPENDIX C

A Checklist of Strategies for Enhancing a Higher Education

Art Photography Course Through the Creative Integration of Technology

Mission:

The challenge of developing a checklist which creatively integrates innovative 21st century technology into an art photography course was in maintaining foundations, principles, theory, and practice while building essential skills needed to learn and succeed in today’s world. The intention of this checklist is to evolve an art photography course into the 21st century in which it can serve as a foundations course wherein beginning photography students initiate learning and build cognitive, linguistic, visual, communication, problem solving, critical thinking, critical theory, and artistic skills through the creative integration of technology. These skills provide students fundamental knowledge and experiences essential for successful college and professional careers.

Philosophy:

An art photography course will serve to provide beginning photography students with basic fundamental skills, knowledge, and experiences for furthering visual literacy, critical thinking skills, problem solving skills, and photographic skills.

The Foundation:

A studio-based art course has the unique characteristics of learning by doing, quality assurance, and interactivity among peers. Constructivism and connectivism theories were referred to in the development of a list of key elements necessary for maintaining the foundations and standards established in a traditional art photography course experience while creatively integrating technology.
Learning Outcomes:

Maintaining learning outcomes was a priority when identifying strategies for enhancing a higher education art photography course through the creative integration of technology. Six learning outcomes were identified with suggestions for technology integrated teaching strategies.
# First Draft

## A Checklist of Strategies for Enhancing a Higher Education Art Photography Course Through the Creative Integration of Technology

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Technology Integrated Teaching Strategies</th>
</tr>
</thead>
</table>
| 1. Fundamental skills to correctly manipulate the mechanics of the camera and lens, including:  
  - Correct exposure  
  - Metering methods  
  - Depth of field via aperture control  
  - Motion via shutter speed controls | Creative use of innovative software to present information:  
  - Images, descriptive text, and audio posted to webpage.  
  - Video recording of demonstrations posted to webpage.  
  - Links to relevant information on the Internet posted to a collaborative learning environment such as a Wiki.  
  - Assignments, deadlines, projects (each assignment should advance the learning experience) posted to a course management environment such as Blackboard.  
  - Virtual office hours and instant messaging such as Meebo (an IM program that supports multiple IM services). |
| 2. Develop problem solving skills:  
  - Effective evaluation of images, histograms, and negatives.  
  - Corrective action of shooting, developing, and printing. | Complement the traditional classroom experience:  
  - Video recordings of demonstrations posted to a webpage.  
  - Examples of images that exhibit proper and improper techniques, charts, graphics, and descriptive audio shared through the use of slide show software.  
  - Assignments, deadlines, projects (each assignment should advance the learning experience) posted to a collaborative learning environment.  
  - Virtual office hours and instant messaging. |
| 3. | Develop a capacity to think, write, and speak critically:  
• Analyze and interpret photographs for composition, content, and technical skill.  
• Assess one’s own work and the work of others conducive to thoughtful and constructive feedback for idea development and personal growth. | Enhance the existing studio classroom experience:  
• Critique via effective art critique software.  
• Utilize social networking, discussion boards, blogs, computers, and digital media, for self reflection and maintaining peer relationships and the exchange of information.  
• Sharing and distributing work outside of the studio environment. |
|---|---|---|
| 4. | Knowledge of the history of photography and the practice of photography, including:  
• Significant events and people  
• Technical advances  
• Interpretation of images in a social, political, and cultural context. | Create an interactive classroom environment:  
• Utilize podcasts and other software to create narratives for digital storytelling.  
• Creative use of state of the art software to present information with examples of images, descriptive audio, and text posted to webpage.  
• Links to relevant Internet sites.  
• Employ a discussion board to connect the critique discussion to cultural contexts, historical and contemporary art references.  
• Utilize collaborative learning environments for discourse and information sharing. |
| 5.       | Development of skills for designing images that effectively communicate concepts as it relates to content:  
|          | • Composition  
|          | • Color  
|          | • Perspective  
|          | • Lighting  
|          | Supplement the traditional classroom with:  
|          | • Creative use of state of the art software to present information and examples of images.  
|          | • Links to relevant Internet sites posted to a collaborative learning environment.  
|          | • Utilize discussion boards and social networking to develop communication skills involving visual images.  
| 6.       | Expand on the progression of artistic expression and personal growth.  
|          | • Formulate a creative voice  
|          | • Improve technical skills  
|          | • Develop an attention to detail  
|          | • Portfolio and professional development  
|          | Utilize technology for personal growth and professional development:  
|          | • Create a blog and/or social networking sites.  
|          | • Utilize concept maps to develop final projects and conceptualize work.  
|          | • Documentation of the development of work.  
|          | • Building information and media literacy skills.  
|          | • Creation of a personal digital portfolio. |
APPENDIX D

Evaluation Form Alpha Review

Please type your responses to the following questions.

Your name and contact information will remain confidential.

Name: __________________________________ Date: ____________________________

1. Please describe your general impression of the Checklist of Strategies for the Creative Integration of Technology in an Art Photography Course in Higher Education.

2. Were you able to easily identify and understand the learning outcomes and the technology integrated teaching strategies?

3. Do the learning outcomes and the technology integrated teaching strategies found in the checklist accurately reflect the criteria necessary for evolving an art photography course into the 21st century by building information, media, and technology skills?

4. What aspects of the learning outcomes and technology integrated teaching strategies would you consider using or not using and why?

5. In your opinion would an instructor be able to implement these learning outcomes and technology integrated teaching strategies? Why or why not?

6. What are the overall strengths of the checklist?

7. What are the overall weaknesses of the checklist?

8. Are there any additional suggestions or recommendations you would make concerning any aspect of the checklist?
APPENDIX E

Alpha Evaluation Form: Expert Panel Member #1

Please type your responses to the following questions.

1. Please describe your general impression of the Checklist of Strategies for the Creative Integration of Technology in an Art Photography Course in Higher Education.

I think it is a good place to start a general discussion on technology in/out of the classroom. My overriding thought as I read it was, “More work for the professor.” In a perfect world, technology would make our job easier, but implementing all these suggestions would take an enormous amount of time. That assumes that the professor is already up to speed with the technology/application to begin with. I maintain blogs for each of my classes and it takes up an enormous amount of time.

2. Were you able to easily identify and understand the learning outcomes and the technology integrated teaching strategies?

Yes, for the most part. I am not into IM so I wasn’t familiar with Meebo. “Art Critique” software is mentioned. I have never heard of such software. I think an appendix of the technology mentioned should be included as part of the checklist. There, more information could be provided on each app/technology.

3. Do the learning outcomes and the technology integrated teaching strategies found in the checklist accurately reflect the criteria necessary for evolving an art photography course into the 21st century by building information, media and technology skills?

Yes, for the most part. I already include many of these in my teaching. However, the use of videos and graphs is long established even if the way they are accessed has changed. I feel there are other emerging technologies such as mobile computing that should be addressed.
4. What aspects of the learning outcomes and technology integrated teaching strategies would you consider using or not using and why?

A number of the suggestions don’t seem practical in the real world. Virtual office hours for example: Very few students come to real office hours, I can’t imagine that virtual office hours would fare any better. Very seldom is communication with students critically time sensitive. Email generally works very well. If it is very time critical, they find me in class or during my office hours. I don’t like IM, and I certainly don’t want to IM with students. I don’t want to constantly be available to my students. I allow students to be my Facebook friend after they have completed a course. Even that is problematic as they will often ask me technical questions via Facebook over the weekend or evenings. I want a division of personal time and work time.

5. In your opinion would an instructor be able to implement these learning outcomes and technology integrated teaching strategies? Why or why not?

I would argue that they should be selective, but they should be utilizing many of them. If they were to utilize them all, there would be no time to actually prepare the materials themselves.

6. What are the overall strengths of the checklist?

It’s a nice means to begin an internal dialog about what works best to facilitate learning. For example, I use blogs rather than Blackboard. Students don’t have to log in to read my blogs nor do they have to be familiar with yet another propriety interface.

7. What are the overall weaknesses of the checklist?

Technology can be invasive and get in the way of teaching if not used in moderation. Students at the university at which I teach are not yet savvy when it comes to Blackboard. I can require that they use it, but I will be creating a hindrance and deterrent rather than facilitate their learning on
the subject matter. Technology changes so rapidly that the checklist would need to be continually updated.

8. Are there any additional suggestions or recommendations you would make concerning any aspect of the checklist?

Podcasts take a significant amount of time to produce. How many students will really listen/watch them? Students will likely feel that they don’t have to attend class because they can just watch the podcast. I find this is a problem with having a blog that details what was covered in class. You wrote, “Creative use of state-of-the-art software to present information with examples of images, descriptive audio, and text posted to webpage.” What software is that?

State-of-the-art always changes. Before Blackboard bought out its competitor, WebCT, many institutes used WebCT. Now, all the students and faculty that used WebCT have to learn how to use Blackboard. Was any of it worth it?

I have said numerous times that I don’t know how I ever taught before the Internet. For me, one of the greatest advantages is the ability to immediately find almost any image or information that may spontaneously be brought up or relevant during a class. During a critique, a student may show an image that reminds me of a Man Ray photo. So, I just pull up my browser, perform a Google Image search, and pull up the image in a matter of moments. I think you should write more about how to utilize the immediacy of the web. Also, I am confident that within 5 years time, I will walk into a classroom, tell the students to grab their tablet computers and cameras (assuming they are not the same device by that point), and take the class outside to teach it. Mobile computing is the future of computing. I feel that should be addressed.
Alpha Evaluation Form: Expert Panel Member #2

Please type your responses to the following questions.

1. Please describe your general impression of the Checklist of Strategies for the Creative Integration of Technology in an Art Photography Course in Higher Education.

There are some very strong and innovative ideas presented in this proposal. I liked the fact that there were a number of different technological mediums given for enhancing the classroom. It is clear that you understand how resources (and access to resources) will differ from school to school, as well as the fact that students learn in many different ways.

Some questions that initially come to mind involve cost estimates and the inclusion of a funding model, how the outcomes were determined, and examples of programs or schools that have utilized this approach.

2. Were you able to easily identify and understand the learning outcomes and the technology integrated teaching strategies?

Yes—the outcomes are very clear and concise.

I would think about including an explanation as to how the outcomes were determined. Were they taken from an existing class or institution (which you would probably want to cite), an academic journal, book, or database, or are they unique to this proposal?

Also, two out of the four outcomes seem more geared toward core competencies or general education then photography (outcome #2 problem solving skills and outcome #3 critical thinking). Was this the intent? Would more photography specific outcomes be more appropriate for this project? The components of the outcome statements are very strong—perhaps you could rewrite the outcomes to reflect these components.
3. Do the learning outcomes and the technology integrated teaching strategies found in the checklist accurately reflect the criteria necessary for evolving an art photography course into the 21st century by building information, media, and technology skills?

Please see comments above.

4. What aspects of the learning outcomes and technology integrated teaching strategies would you consider using or not using and why?

Although my field of expertise is not photography, I feel that both the outcomes (especially the outcome components) and the integrated teaching strategies would be quite effective in any classroom. They support the idea of student engagement and active learning as well as basic information literacy (for example, outcome #4 lists “links to relevant Internet sites.” This is a very important skill for students to understand).

5. In your opinion would an instructor be able to implement these learning outcomes and technology integrated teaching strategies? Why or why not?

In order to make an informed opinion, I would need to see a funding model for each of these outcomes. It also depends on the available resources (as well as what is already available) at each institution. You may want to think about using two to three specific schools (you could go as far as including as examples: urban public, urban charter, suburban public, and private) to use as examples. You could also think about including possible grant agencies or foundations both locally and nationally as ways to acquire funds for technological upgrades.

I would also like to see an example of institutions that have utilized a similar model. What have the results been? Were the overall costs manageable? Did augmenting these programs have a positive effect on the rest of the school? What percentage of the overall student body was able to use the equipment?
6. What are the overall strengths of the checklist?

Your ideas are clear, organized, and well thought out. The teaching techniques suggested are very innovative, especially for photography, and would enhance any art photography program.

7. What are the overall weaknesses of the checklist?

Simply the need to go into more detail, specifically regarding cost estimates, funding models, and examples of best practices.

8. Are there any additional suggestions or recommendations you would make concerning any aspect of the checklist?

Please see the comments above.
Alpha Evaluation Form: Expert Panel Member #3

Please type your responses to the following questions.

1. Please describe your general impression of the Checklist of Strategies for the Creative Integration of Technology in an Art Photography Course in Higher Education.

Nicely presented and easy to understand, but I would suggest making a stronger and more compelling case for the need for technology as it relates to an Art Photography course. Right now the discussion seems to pertain to an idea that technology is a necessary component to being a well rounded and prepared student. But this assumes, in a way, that students are not coming with this skill set. I like the idea of using Blackboard as a way to store examples and information to students. If only a virtual darkroom could be built.

2. Were you able to easily identify and understand the learning outcomes and the technology integrated teaching strategies?

Yes, the learning outcomes were fine. I wanted more information about the technology that was going to be used (such as the name of the art critique software). I also think the type of student who might be taking this class needs to be defined better. If this is a beginning class, then an electronic portfolio might not be the best tool (if only because this is a beginning student producing beginner’s work). If this is a beginning student in a selective admission art school, then an electronic portfolio might not be such a bad idea for this student (if this student is the kind of student who already comes to the class knowing something about photography).

3. Do the learning outcomes and the technology integrated teaching strategies found in the checklist accurately reflect the criteria necessary for evolving an art photography course into the 21st century by building information, media, and technology skills?
The inclusion of technology certainly adds a layer to the texture of the course. I think the use of a Wiki is a bit outdated (and really not necessary if a platform like Blackboard is being used). More people are using technologies such as Twitter, LinkedIn, and blogs to enhance employment and to build professional connections. Also, Second Life might be an interesting technological tool for an idea like this (because it could be a virtual classroom and have a virtual art gallery).

4. What aspects of the learning outcomes and technology integrated teaching strategies would you consider using or not using and why?

Images, descriptive text, and audio posted to webpage; video recording of demonstrations posted to webpage; examples of images that exhibit proper and improper technique; and charts, graphics, and descriptive audio shared through the use of slide show software. These tools would help to enhance and reinforce the learning process for a beginning photo student. I also like the idea of the virtual office hours.

5. In your opinion would an instructor be able to implement these learning outcomes and technology integrated teaching strategies? Why or why not?

Yes, much of what is suggested in here already exists, so the technology would not necessarily have to be developed.

6. What are the overall strengths of the checklist?

I think that this is an interesting and important concept to consider. I like and appreciate the fact that the conversation is happening. The question of how to “modernize” a field that has a more limited scope (technologically speaking) is an interesting question to entertain. I also like the way the information was presented overall—there was a column for outcomes and a column for the enhanced technology.

7. What are the overall weaknesses of the checklist?
I truly believe that in order to make this experience one where the students have a deep learning experience, one would truly need to develop a virtual lab experience to help reinforce the basic concepts of the art photography class. So, if I had to identify a weakness it would be to say that some of the suggestions present exactly what would happen in the classroom anyway (such as examples of work to address lightening and to discuss aperture). The use of technology should enhance the class in some way and not only perpetuate what is already happening in the class.

8. Are there any additional suggestions or recommendations you would make concerning any aspect of the checklist?

If this is about “beginning” students, then much of what drives the course should be about enhancing the understanding of the discipline. For students who are photo majors, the use of social networking, a website, an electronic portfolio, and digital editing skills will only help make the student more employable in the end.
Alpha Evaluation Form: Expert Panel Member #4

Please type your responses to the following questions.

1. Please describe your general impression of the Checklist of Strategies for the Creative Integration of Technology in an Art Photography Course in Higher Education.

This checklist creates a list of uses for integrating technology into a photography course but not detail or focus on “best practices.” It states one should use instant messaging and hold virtual office hours, for instance, but does not detail a “practice” for using these tools. A practice for this tool would perhaps be: require students to sign up for office hours and check in regularly for one-to-one interaction.

2. Were you able to easily identify and understand the learning outcomes and the technology integrated teaching strategies?

I understand the learning outcomes. Again, I would debate that simply listing available tools does not constitute identifying a best practice. In regards to the item: Video recordings of demonstrations posted to a webpage, would it be a “Best Practice” to stream that video live in order to deal with students questions, create a step-by-step tutorial video myself, or find one on the Internet that closely resembles what I am teaching.

Identifying these practices would better help someone prepare their course.

3. Do the learning outcomes and the technology integrated teaching strategies found in the checklist accurately reflect the criteria necessary for evolving an art photography course into the 21st century by building information, media, and technology skills?

Yes. This document accurately reflects the learning outcomes and tools needed to begin identifying what would be best practices in a course of this kind.
4. What aspects of the learning outcomes and technology integrated teaching strategies would you consider using or not using and why?

I would consider using all of them. However, I again highlight the use of “Best Practices” in the use of this checklist. Identifying the learning outcomes and technology tools strategies does not constitute successful pedagogical practice.

5. In your opinion would an instructor be able to implement these learning outcomes and technology integrated teaching strategies? Why or why not?

Yes, using this checklist an instructor would be able to implement them. However, I would warn against doing so without accurate consultation of the successful practices identified in the use of these tools, which is not provided here.

6. What are the overall strengths of the checklist?

It provides a current and direct list of the technology tools available for the integration of technology into a photography course, accurately coupled with valuable learning outcomes.

7. What are the overall weaknesses of the checklist?

It does not identify or address best practices for the use of each technology listed.

It comes across as a daunting and intimidating list of goals that an instructor would have to overcome to integrate technology into their course. The work listed here under “Strategies” could take years to create without an understanding of best practices, or without proper instructional design and technology training.

8. Are there any additional suggestions or recommendations you would make concerning any aspect of the checklist?

I suggest strategies be used to describe this checklist. I would add your name to any documents you create as part of a college credit course.
Alpha Evaluation Form: Expert Panel Member #5

Please type your responses to the following questions.

1. Please describe your general impression of the Checklist of Strategies for the Creative Integration of Technology in an Art Photography Course in Higher Education.

First impression of chart was that it contained terrific methods for using technology to enhance the classroom experience. Also, that while the ideas are GREAT, they are also time-consuming. I want an assistant! Seriously, this is the direction education is going and students are expecting it. May I steal these strategies?

2. Were you able to easily identify and understand the learning outcomes and the technology integrated teaching strategies?

I was able to understand the learning outcomes and the strategies. They were clear. However to be picky, the learning outcomes are not written in a correct format. While I get the intent and have written my course goals/learning outcomes in a format and language just like this, I have been corrected myself and have revised mine to meet the correct standard. If this is a checklist for practices to enhance the class, I would use a different term instead of “learning outcome.” Perhaps call them “instructional goals” because this relates to the strategy: you have a goal to deliver content, and the technology is meant to facilitate student learning.

Example:

Instructional Goal: Teach skills to correctly manipulate mechanics of camera

Technology strategies: Webpage postings of descriptive text and audio, video demonstrations, links to sites, collaborative Wiki, virtual office hours, etc.

Learning outcomes: Using camera in manual mode, student will create correctly exposed images. Student will make images that illustrate narrow and wide depth of field, etc.
3. Do the learning outcomes and the technology integrated teaching strategies found in the checklist accurately reflect the criteria necessary for evolving an art photography course into the 21st century by building information, media, and technology skills?

Absolutely, these are all strategies that are being cultivated and applied to many programs not only for web-based classes but land ones as well. Students are living in a virtual world and are expecting more virtual “support” to their classroom experiences.

4. What aspects of the learning outcomes and technology integrated teaching strategies would you consider using or not using and why?

I would consider using all of them. Not all of them thrill me since I am a little “old school” and not a huge user of social media but I recognize the significance of these means of communication. I think they are very important to learn and effectively use.

5. In your opinion would an instructor be able to implement these learning outcomes and technology integrated teaching strategies? Why or why not?

As mentioned above, getting some of these systems set up is time consuming. And using them is time consuming. Doing demos in class is one thing: you’d have to plan for podcasts, get a decent video… BUT once you have one, as long as the content of the podcast stays the same (film processing) you have it.

I already use many of the suggested strategies. I use Blackboard, web links. I don’t use discussion boards, wikis, podcasts, IM, or social media for classroom purposes.

6. What are the overall strengths of the checklist?

Provides awareness of the importance of keeping current with technology and keeping up with how the next generation is learning, communicating, sharing information, and marketing themselves.
7. What are the overall weaknesses of the checklist?

Some of specific learning outcomes did not have specific links to the strategies listed for them.

The strategies could be applied to all the learning outcomes/strategies.

8. Are there any additional suggestions or recommendations you would make concerning any aspect of the checklist?

In an art class, qualitative subjective aspects that are so important to being an artist are nearly impossible to put into quantitative language and quantitative assessment data. Strategy #6 will be the most difficult to assess, evaluate, gather “data.” But I do like the blog idea as a method to develop a vision.
APPENDIX F

Hello Expert Panel Members,

All of my expert panel members have responded to the alpha review of the checklist and evaluation form. Attached you will find an electronic version of the revised checklist and a semi-structured evaluation form for the beta review process.

In order to provide you a framework with which to respond, I have provided a summary of the revisions, as well as the rationalization for excluding some of the ideas and recommendations.

Attached as a separate document you will find the semi-structured beta evaluation form.

Please review the checklist and respond to the evaluation form. Completed documents should be returned to me electronically as soon as possible.

Feel free to contact me by phone or email if you have any questions or concerns.

Thanks again,

Melissa

Melissa Partin-Harding
APPENDIX G

Strategies for Enhancing Higher Education Art Photography Courses Through the Creative Integration of Technology

Summary of Alpha Review Revisions:

The expert panel alpha review process was used to gather feedback on the checklist. Many useful structured and substantive ideas were provided by the expert panelists. The checklist was revised based on many of the comments and suggestions and many of their ideas were incorporated into the revised version, while many were addressed in other sections of the thesis.

In order to more closely represent the function of the study, the formal title of the checklist was changed to Strategies for Enhancing Higher Education Art Photography Courses Through the Creative Integration of Technology. In response to several expert panel members concerns with the time investment necessary for implementing these strategies, it was determined that implementation in small increments over several semesters in several art photography courses would ultimately propel an art photography course of this kind into the 21st century.

The checklist was revised to include two additional columns. One column was added to include a correctly structured list of learning outcomes. The original learning outcomes column was renamed “Learning Goals,” as was recommended by one expert panel member. Under the column labeled “Technology Integrated Teaching Strategies,” the suggestions were re-structured and the listing of specific and/or brand name software was eliminated. This column was restructured in order to make the strategies more generic, to prolong the relevance of the checklist as software and technology evolve, and to expand the application for various
technology resources. The suggested appendix of software applications and their uses was determined to be irrelevant for the newly structured checklist, and is addressed in the limitations of the study section. In addition, definitions for some of the technological tools were included in the definition of terms section. Another column was added to highlight strategies for integrating the technological tools as was strongly recommended by one expert panel member. Six strategies for the effective integration of technology were identified and incorporated with the six learning outcomes, learning goals, and technology integrated teaching strategies. The six strategies for the effective integration of technology are intended to cross over and complement the learning outcomes, learning goals, and technology integrated teaching strategies. The recommendations for the inclusion of a funding model and the investigation into funding options for a model of this type was determined to be too broad for this study and is recommended for future studies in this field. A study on the effect of augmenting these strategies is also recommended for future studies. The recommendation for the inclusion of examples from other institutions that have implemented a model of this type was researched and reported in the literature review section.
<table>
<thead>
<tr>
<th>Instructional Goals</th>
<th>Learning Outcomes</th>
<th>Technology Integrated Teaching Strategies</th>
<th>Strategies for Effective Integration of Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong> Teach skills to correctly manipulate the mechanics of the camera and lens, including:</td>
<td>Using camera in manual mode, student will:</td>
<td>Creative use of technology to present information:</td>
<td>Complement tried and true techniques with technology options:</td>
</tr>
<tr>
<td>o Correct exposure</td>
<td>o Create correctly exposed images by utilizing a variety of metering methods.</td>
<td>o Images, descriptive text, and audio posted to a webpage.</td>
<td>o Utilize available resources, create and integrate presentations that promote learning through the use of multimedia and technology.</td>
</tr>
<tr>
<td>o Metering methods</td>
<td>o Illustrate the ability to produce images with shallow and deep depth of field.</td>
<td>o Video recording of demonstrations posted to a webpage.</td>
<td>o Give clear directions for participating in virtual learning environments.</td>
</tr>
<tr>
<td>o Depth of field via aperture control</td>
<td>o Illustrate the ability to produce images that effectively demonstrate motion and frozen motion.</td>
<td>o Links to relevant information posted to a collaborative learning environment.</td>
<td>o Each assignment should advance the learning experience and develop technical skills.</td>
</tr>
<tr>
<td>o Motion via shutter speed controls</td>
<td></td>
<td>o Assignments, projects, deadlines, posted to a course management system.</td>
<td></td>
</tr>
<tr>
<td>2. Assist students in developing problem solving skills:</td>
<td>Problem solving skills. Students will:</td>
<td>Complement the traditional classroom experience:</td>
<td>Identify specific pedagogical outcomes aligned with technology tools which promote the learning outcomes and goals.</td>
</tr>
<tr>
<td>o Effective evaluation of images, histograms, and negatives.</td>
<td>o Illustrate the ability to evaluate images, histograms, and negatives.</td>
<td>o By posting course presentations, demonstrations, and multimedia resources for student access and review.</td>
<td>o Utilize multimedia resources to present information, give direction, and promote learning.</td>
</tr>
<tr>
<td>o Corrective action of shooting, developing, and printing.</td>
<td>o Illustrate the ability to take corrective action when shooting, developing, and printing.</td>
<td>o Assignments, deadlines, projects posted to a course management system.</td>
<td>o Post discussion questions on a social media site to promote and guide learning outside of the classroom.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Open lines of communication through the use of email, virtual office hours, and instant messaging.</td>
<td>o Create assignment to advance and develop technical skills.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Integrating technology to promote technology literacy.</td>
<td>o Establish email response guidelines and set regular virtual and/or instant messaging availability times as an option for communicating and answering questions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>o Establish guidelines and requirements for instructor-student one-on-one interaction.</td>
</tr>
<tr>
<td>Instructional Goals</td>
<td>Learning Outcomes</td>
<td>Technology Integrated Teaching Strategies</td>
<td>Strategies for Effective Integration of Technology</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>3.</strong> Develop student’s capacity to think, write, and speak critically:</td>
<td>Critical writing, thinking, and speaking skills. Students will:</td>
<td>Enhance the existing studio classroom experience:</td>
<td>Keep technology simple to avoid hindering learning outcomes..</td>
</tr>
<tr>
<td>- Analyze and interpret photographs for composition, content, and technical skill.</td>
<td>o Produce analytical and interpretive reports related to photographic composition, content, and technical skills.</td>
<td>- Critique through an online photo sharing community.</td>
<td>o Establish rules, guidelines, and requirements for posting comments and sharing work.</td>
</tr>
<tr>
<td>- Assess one’s own work and the work of others conducive to thoughtful and constructive feedback for idea development and personal growth.</td>
<td>o Verbalize critical, constructive, and thoughtful ideas conducive to personal and artistic growth and development.</td>
<td>- Utilize social networking, discussion boards, blogs, and digital media, for self reflection, building, and maintaining peer relationships, and the exchange of information.</td>
<td>o Extend learning outside of the classroom by requiring students to participate in virtual learning environments.</td>
</tr>
<tr>
<td>- Verbalize and write analytically, interpretively, and constructively to effectively contribute to the artistic growth of their peers.</td>
<td>o Share and distribute work outside of the studio environment.</td>
<td>- Share and distribute work outside of the studio environment.</td>
<td>o Create assignments that promote virtual learning environment participation.</td>
</tr>
<tr>
<td><strong>4.</strong> Teach students about the history of photography and the practice of photography, including:</td>
<td>Knowledge of photographic history and practice:</td>
<td>Create an interactive classroom environment:</td>
<td>o Review posts to highlight important and teachable points.</td>
</tr>
<tr>
<td>- Significant events and people</td>
<td>- Students will have the ability to discuss significant events and people in the history of photography.</td>
<td>- Create narratives for digital storytelling.</td>
<td></td>
</tr>
<tr>
<td>- Technical advances</td>
<td>- Students will exhibit an understanding of historical technical advances.</td>
<td>- Creatively present information with examples of images, descriptive audio, and text posted to webpage.</td>
<td></td>
</tr>
<tr>
<td>- Interpretation of images in a social, political, and cultural context.</td>
<td>- Students will demonstrate the ability to interpret images in a social, political, and cultural context.</td>
<td>- Provide links to relevant Internet sites.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Employ a discussion board to connect the critique discussion to cultural contexts, historical and contemporary art references.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Utilize collaborative learning environments for discourse and information sharing.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructional Goals</td>
<td>Learning Outcomes</td>
<td>Technology Integrated Teaching Strategies</td>
<td>Strategies for Effective Integration of Technology</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
</tbody>
</table>
| 5. Development of student’s skills for designing images that effectively communicate concepts as it relates to content: | Understanding of content and design skills as they relate to content. Students will: | Supplement the traditional classroom with:  
  - The spontaneity of the Internet by incorporating information and images as they relate to the individuality of the course.  
  - The creative presentation of information and examples of images.  
  - Links to relevant Internet sites posted to a collaborative learning environment.  
  - Discussion boards and/or social networking to develop communication skills involving visual images. | Maintain learning outcomes while utilizing technology to complement traditional teaching methods.  
  - Be open to flexibility in order to capitalize on technology to promote learning.  
  - Require students to comment on links in a discussion board format.  
  - Set requirements for commenting and posting.  
  - Document participation and visit discussion board regularly to give feedback and guide the discussion. |
| o Composition  
   o Color  
   o Perspective  
   o Lighting | o Illustrate and visually communicate images for composition, color, perspective, and lighting.  
   o Produce images that communicate concepts as it relates to content.  
   o Demonstrate and progressively improve technical, conceptual, and design skills. | | |
| 6. Expand on the student’s progression of artistic expression and personal growth: | Artistic expression and personal growth. Students will: | Utilize technology for personal growth and professional development:  
  - Create a blog and/or social networking site.  
  - Utilize concept maps to conceptualize and develop final projects.  
  - Document the development of work.  
  - Build information and media literacy skills.  
  - Utilize a virtual world for a virtual gallery.  
  - Creation of a personal digital portfolio. | Use technology strategically to encourage future personal and professional growth while promoting technical literacy.  
  - Explain the role that an online presence can play in a career.  
  - Utilize technology to facilitate learning while simultaneously building skill and confidence in technical proficiency.  
  - Develop or consult a portfolio evaluation rubric. |
| o Formulate a creative voice  
   o Improve technical skills  
   o Develop an eye for and an attention to detail  
   o Portfolio and professional development | o Demonstrate the ability to verbally express a personal creative voice.  
   o Exhibit improvement in technical skills.  
   o Exhibit improvement in technical quality and detail.  
   o Produce a portfolio and demonstrate professional growth. | | |
APPENDIX H

Evaluation Form: Beta Review

Please type your responses to the following questions.

Your name and contact information will remain confidential.

Name: ___________________________ Date: ___________________________

1. Does the revised title, “Strategies for Enhancing Higher Education Art Photography Courses Through the Creative Integration of Technology” more closely represent the intention of the checklist?

2. In your opinion do the revisions to the learning goals column and the addition of the learning outcomes column add to the utility of the checklist? Please explain.

3. Did the restructuring of the technology integrated teaching strategies column and the removal of specific software applications improve the checklist? Please explain why or why not.

4. Does the restructured focus and addition of strategies for the effective integration of technology add to the utility of the checklist? Please explain your answer.

5. What is your general impression of the revised checklist?

6. Do you have any comments or recommendations for moving forward with the checklist?
APPENDIX I

Beta Evaluation Form: Expert Panel Member #1

Please type your responses to the following questions.

1. Does the revised title, “Strategies for Enhancing Higher Education Art Photography Courses Through the Creative Integration of Technology,” more closely represent the intention of the checklist?

   The revised title is accurate for the revised checklist.

2. In your opinion do the revisions to the learning goals column and the addition of the learning outcomes column add to the utility of the checklist?

   The learning goals column clarifies the intention of the checklist.

3. Did the restructuring of the technology integrated teaching strategies column and the removal of specific software applications improve the checklist?

   The revised column of strategies adds to the utility of the checklist.

4. Does the restructured focus and addition of strategies for the effective integration of technology add to the utility of the checklist?

   Yes, the strategies give direction on integrating technology.

5. What is your general impression of the revised checklist?

   The checklist has improved and is useful.

6. Do you have any comments or recommendations for moving forward with the checklist?

   The checklist would serve to open the lines of communication for implementing technology into a studio art class.
Beta Evaluation Form: Expert Panel Member #2

Please type your responses to the following questions.

1. Does the revised title, “Strategies for Enhancing Higher Education Art Photography Courses Through the Creative Integration of Technology,” more closely represent the intention of the checklist?

   I believe the revised title more closely represents the intent of the checklist.

2. In your opinion do the revisions to the learning goals column and the addition of the learning outcomes column add to the utility of the checklist?

   Yes, it allows for a more focused purpose.

3. Did the restructuring of the technology integrated teaching strategies column and the removal of specific software applications improve the checklist?

   Yes, however there are still some questions that could be addressed. Please see comments on #6.

4. Does the restructured focus and addition of strategies for the effective integration of technology add to the utility of the checklist?

   Yes, however there are still some questions that could be addressed. Please see comments on #6.

5. What is your general impression of the revised checklist?

   I think this could become a very useful tool for higher education instructors in Art Photography who have not yet realized the impact technology can have when supplementing current curriculum.

6. Do you have any comments or recommendations for moving forward with the checklist?

   A few questions you may want to consider:
Would there be suggestions for training faculty who may not have the knowledge about posting material to a webpage, using a blog, digital media, etc? This could be a vital component in making this a viable instructional tool.

Along the same lines, what type of suggestions would you have about training students on this technology? If students have no prior experience with computers, social media, blogs, etc., it may take away a substantial amount of class time to provide appropriate training.

What types of computers would you recommend instructors purchase if they are not yet currently available? Macs or PCs? If Macs, another faculty might include how to train both students and faculty (at Owens, this is done through a separate course of study).

While I like the idea or removing names of specific software, you may want to provide a glossary page of definitions for terms such as: e-portfolio, blog, wiki, course management system, digital media, etc. This may help avoid any confusion for those faculties unfamiliar with these terms.

Finally, I did see you decided not to include mention of a funding model within the scope of this project. I would however, address some strategies institutions could explore if resources (such as computers) are not available. With budget situations currently in turmoil, this could be a common problem!
**Beta Evaluation Form: Expert Panel Member #3**

Please type your responses to the following questions.

1. Does the revised title, “Strategies for Enhancing Higher Education Art Photography Courses Through the Creative Integration of Technology,” more closely represent the intention of the checklist? Not really. It makes more sense to say something like through the integration of creative learning communities (or something like that).

2. In your opinion do the revisions to the learning goals column and the addition of the learning outcomes column add to the utility of the checklist? Yes. This addition really makes a difference.

3. Did the restructuring of the technology integrated teaching strategies column and the removal of specific software applications improve the checklist? Yes. These are measurable, thus making them more meaningful in curriculum design.

4. Does the restructured focus and addition of strategies for the effective integration of technology add to the utility of the checklist? Yes. This version is much clearer and better organized….

5. What is your general impression of the revised checklist? I think it is better than the previous one. It is more robust and better organized.

6. Do you have any comments or recommendations for moving forward with the checklist? Nicely done. This has measurable outcomes and can provide students with a sense of deep learning that was missing from the first version.
Beta Evaluation Form: Expert Panel Member #4

Please type your responses to the following questions.

1. Does the revised title, “Strategies for Enhancing Higher Education Art Photography Courses Through the Creative Integration of Technology,” more closely represent the intention of the checklist?
   
   Yes, if it’s Technology, it works much better as a title!

2. In your opinion do the revisions to the learning goals column and the addition of the learning outcomes column add to the utility of the checklist?
   
   Absolutely! Very much improved!

3. Did the restructuring of the technology integrated teaching strategies column and the removal of specific software applications improve the checklist?
   
   Indeed.

4. Does the restructured focus and addition of strategies for the effective integration of technology add to the utility of the checklist?
   
   I believe so. This is much more pragmatic!

5. What is your general impression of the revised checklist?
   
   I would certainly give this to any faculty in photography who are interested in creating an online or blended course.

6. Do you have any comments or recommendations for moving forward with the checklist?
Beta Evaluation: Expert Panel Member #5

Please type your responses to the following questions.

1. Does the revised title, “Strategies for Enhancing Higher Education Art Photography Courses Through the Creative Integration of Technology,” more closely represent the intention of the checklist?

   Yes, I think this is an appropriate revision that reflects the spirit and intent of the checklist. Nice job!

2. In your opinion do the revisions to the learning goals column and the addition of the learning outcomes column add to the utility of the checklist?

   Yes. Ohio is moving in the direction of tracking outcomes for assessment purposes so tailoring this checklist to accommodate that will make it more useful. A measurable outcome for each “goal” is a plus. The outcome can be in the form of a graded print, a test, a self evaluation; some indicator that the goal is being met in a measurable manner.

3. Did the restructuring of the technology integrated teaching strategies column and the removal of specific software applications improve the checklist?

   Yes. Technology will change; specific software will change so if you can be generic it will make the checklist more universal.

4. Does the restructured focus and addition of strategies for the effective integration of technology add to the utility of the checklist?

   Yes.

5. What is your general impression of the revised checklist?

   Better. It is clearer, has a better workflow so to speak.
6. Do you have any comments or recommendations for moving forward with the checklist?

For the outcomes, ask the question: how will this be measured? Make the outcome in a language that can have an answer that is measurable. For example:

#6: Student will produce a portfolio and demonstrate professional growth. You can measure that they made a portfolio: it is a physical thing. How will you measure professional growth? We teachers intuitively know what this is and we can evaluate it qualitatively: “outcomes” is more about a quantitative measure.

Another way to state #6: Student will produce a portfolio that meets professional industry standards and practices. Then the measure (grade sheet) would reflect the standards of technical proficiency, composition, etc that we know shows their growth.
### APPENDIX J

**Strategies for Enhancing Higher Education**  
*Art Photography Courses Through the Creative Integration of Technology*

<table>
<thead>
<tr>
<th>Instructional Goals</th>
<th>Learning Outcomes</th>
<th>Technology Resources</th>
<th>Effective Pedagogical Integration of Technology</th>
</tr>
</thead>
</table>
| **1.** Teach skills to correctly manipulate the mechanics of the camera and lens, including:  
  - Correct exposure  
  - Metering methods  
  - Depth of field via aperture control  
  - Motion via shutter speed controls | Using camera in manual mode, student will:  
  - Create correctly exposed images by utilizing a variety of metering methods.  
  - Produce images illustrating shallow and deep depth of field.  
  - Produce images that effectively demonstrate stop-action motion and motion blur effects. | Use of technology to share information:  
  - Images, descriptive text, and audio posted to a webpage.  
  - Video recording of demonstrations posted to a webpage.  
  - Links to relevant information posted to a collaborative learning environment.  
  - Assignments, projects, deadlines, posted to a course management system. | Complement tried and true techniques with technology options:  
  - Utilize available resources, create and integrate presentations that promote learning through the use of multimedia and technology.  
  - Give clear directions for participating in virtual learning environments.  
  - Each assignment should advance the learning experience and develop technical skills.  
  - Utilize technology to facilitate learning while building technical skills. |
| **2.** Assist students in developing problem solving skills:  
  - Effective evaluation of images, histograms, and negatives.  
  - Corrective action of shooting, developing, and printing.  
  - Integrate activities which utilize technology. | Problem solving skills. Students will:  
  - Identify over, under, and correctly exposed histograms and negatives.  
  - Determine how to take corrective action for over and underexposure when shooting, developing, and printing.  
  - Determine how to take corrective action for shooting and printing errors.  
  - Exhibit improvement in technical skills. | Complement the traditional classroom experience:  
  - By posting course presentations, demonstrations, and multimedia resources for student access and review.  
  - By posting assignments, deadlines, and projects to a course management system.  
  - Open lines of communication through the use of email, virtual office hours, and instant messaging.  
  - Build information and media literacy skills by utilizing technology to teach and learn. | Identify specific pedagogical outcomes aligned with technology tools to promote learning outcomes and goals.  
  - Utilize multimedia resources to present information, give direction, and promote learning.  
  - Post discussion questions on a social media site to promote and guide learning outside of the classroom.  
  - Create assignments which advance and develop technical skills.  
  - Establish email response guidelines and set regular virtual and/or instant messaging availability times as an option for communicating and answering questions.  
  - Promote communication by establishing guidelines and requirements for instructor-student one-on-one interaction. |
<table>
<thead>
<tr>
<th>Instructional Goals</th>
<th>Learning Outcomes</th>
<th>Technology Resources</th>
<th>Effective Pedagogical Integration of Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3.</strong> Develop student’s capacity to think, write, and speak critically:</td>
<td>Critical writing, thinking, and speaking skills. Students will:</td>
<td>Enhance the existing studio classroom experience:</td>
<td>Keep technology simple to avoid hindering learning outcomes.</td>
</tr>
<tr>
<td>o Analyze and interpret photographs for composition, content, and technical skill.</td>
<td>o Produce analytical and interpretive reports related to photographic composition, content, and technical skills.</td>
<td>o Critique through an online photo sharing community.</td>
<td>o Establish rules, guidelines and requirements for posting comments and sharing work.</td>
</tr>
<tr>
<td>o Assess one’s own work and the work of others conducive to thoughtful and constructive feedback for idea development and personal growth.</td>
<td>o Verbalize critical, constructive, and thoughtful ideas conducive to personal and artistic growth and development.</td>
<td>o Utilize social networking, discussion boards, blogs, and digital media, for self reflection, building and maintaining peer relationships, and the exchange of information.</td>
<td>o Extend learning outside of the classroom by setting virtual learning environment participation requirements.</td>
</tr>
<tr>
<td></td>
<td>o Verbalize and write analytically, interpretively, and constructively to effectively contribute to the artistic growth of their peers.</td>
<td>o Share and distribute work outside of the studio environment through image sharing applications.</td>
<td>o Create assignments that promote virtual learning environment participation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Develop cognition, communication, and collaboration by utilizing blogs, social media, and collaborative learning environments.</td>
<td>o Review posts to highlight important and teachable points.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>o Manage discussions for content while minimizing interference of the natural progression of the discussion.</td>
</tr>
<tr>
<td><strong>4.</strong> Teach students about the history of photography and the practice of photography, including:</td>
<td>Knowledge of photographic history and practice:</td>
<td>Create an interactive classroom environment:</td>
<td>Use technology to promote learning outside of the classroom.</td>
</tr>
<tr>
<td>o Significant events and people</td>
<td>o Students will have the ability to discuss significant events and people in the history of photography.</td>
<td>o Create narratives utilizing digital storytelling.</td>
<td>o Post material for access to review.</td>
</tr>
<tr>
<td>o Technical advances</td>
<td>o Students will exhibit an understanding of historical technical advances.</td>
<td>o Creatively present information with examples of images, descriptive audio, and text posted to webpage.</td>
<td>o Set a tone by starting the discussion with an open ended question and keep the discussion on track by monitoring and interacting regularly.</td>
</tr>
<tr>
<td>o Interpretation of images in a social, political, and cultural context</td>
<td>o Students will demonstrate the ability to interpret images in a social, political, and cultural context.</td>
<td>o Provide links to relevant Internet sites.</td>
<td>o Establish rules and guidelines for information sharing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Employ a discussion board to connect the critique discussion to cultural contexts, historical and contemporary art references.</td>
<td>o Encourage information sharing and collaboration through the use of a collaborative learning environment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Utilize collaborative learning environments for discourse and information sharing.</td>
<td></td>
</tr>
<tr>
<td>Instructional Goals</td>
<td>Learning Outcomes</td>
<td>Technology Resources</td>
<td>Effective Pedagogical Integration of Technology</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------</td>
<td>----------------------</td>
<td>-----------------------------------------------</td>
</tr>
</tbody>
</table>
| 5. Development of student’s skills for designing images that effectively communicate concepts as it relates to content:  
   - Composition  
   - Color  
   - Tone  
   - Perspective  
   - Lighting | Understanding of content and design skills. Students will:  
   - Illustrate and visually communicate images for composition, color, tone, perspective, and lighting.  
   - Produce images that communicate concepts as it relates to content.  
   - Demonstrate and progressively improve technical, conceptual, and design skills. | Supplement the traditional lecture with:  
   - The spontaneity of the Internet by incorporating information and images as they relate to the individuality of the course.  
   - Technology and the creative presentation of information and examples of images.  
   - Sharing of relevant Internet sites and multimedia presentations.  
   - Discussion boards and/or social networking to develop communication skills involving visual images.  
   - Post material to course management systems for review. | Maintain learning outcomes while utilizing technology to complement traditional teaching methods.  
   - Be open to flexibility in order to capitalize on technology and promote learning.  
   - Provide step-by-step directions for using new technology to insure participating, prevent hindering the learning goal, while promoting technology literacy.  
   - Require students to comment on links in a discussion board format.  
   - Set requirements for commenting and posting.  
   - Document participation and visit discussion board regularly to give feedback and guide the discussion. |
| 6. Expand on the student’s progression of artistic expression and personal growth:  
   - Formulate a creative voice  
   - Develop an eye for and an attention to detail  
   - Portfolio and professional development | Artistic expression and personal growth. Students will:  
   - Demonstrate the ability to verbally express a personal creative voice.  
   - Exhibit improvement in skills, quality, and detail.  
   - Students will produce a portfolio that demonstrates professional industry standards and practices. | Utilize technology for personal growth and professional development:  
   - Create a blog and/or social networking site.  
   - Utilize concept maps to conceptualize and develop final projects.  
   - Digitally document the development of work.  
   - Utilize a virtual world for a virtual gallery.  
   - Creation of a personal digital portfolio. | Use technology strategically to encourage future personal and professional growth.  
   - Explain the role that an online presence can play in a career, both positively and negatively.  
   - Utilize technology to facilitate learning while simultaneously building skill and confidence in technical proficiency.  
   - Develop or consult a portfolio evaluation rubric. |