ABSTRACT

The purpose of this study was to develop a blended learning module in a high school studio course. Blended learning is a mix of traditional face-to-face educational practices with educational technology. Mixing direct instruction with different forms of media & resources designed to improve retention through elaboration and organization of the student-learning objective. The curriculum is constructed around a student-centered approach to teaching and learning. This project is designed measure the student's learning experience through the development the course. Cognitive apprenticeship and social cognitive instructional strategies are used to construct long-range plans. These educational theories emphasize the value of learning through authentic tasks where instruction is scaffold, modeled, and coached. As students demonstrate articulation, the instruction is faded. Instructional strategies value the process of learning and its outcomes, simultaneously evolving our ideas and skills though creative self-expression and exploration of materials and equipment and constructing a body of artistic work over time.

Keywords: Instructional Design, Learning Science, Instruction by Design, Blended Learning, Educational Technology, Educational Development Tools, Student Learning Experience, Studio Art

EDUCATIONAL TECHNOLOGY IN THE STUDIO CLASSROOM:

DEVELOPING A BLENDED MODEL PHOTOGRAPHY STUDIO

FOR THE DIGITAL NATIVE

By

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B.F.A in Art Education, University of Georgia, 2013

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Chapter 1: Introduction

Identifying an interest in blended instruction I bean to explore the concept of the blended model in my Photography classroom. Research today states that blended educational environments can help us meet the diversified needs of students by mixing different forms of media & resources designed to improve retention through elaboration and organization of the student-learning objective. This project's purpose is to design a blended model for a High School Photography classroom based off of the student's learning experience.

Instructional methods

Traditional instruction today is changing to meet the diversified needs of today's digital natives, promoting teachers to integrate technology and instructional design into their classrooms by infusing technology with direct instruction for the purpose of improving student performance. (Krooss, 2013a) In order for this to happen we need to grasp the broader concepts of Learning by Design and how to blend Instructional Design with educational technology.

According to Gibbons (2005), Instructional Design has 2 key advantages. The first advantage is the designer's concern for the learner's needs and concerns. Therefore the student learning experience is a good measure for the development of the design of the blended model. The second advantage that Instructional Design has is a wider theory base in which to meet the specific needs of the design's context. Context is the "conceptual building block" that dictates how the instructional designer will build his Visual Learning Environment (VLE). Gibbons (2011) states that if the designer has a clear vision of what is being designed, then the designer will take the appropriate

approach to make sure all of the building elements required will be designed into it's architecture. If we do not fully understand the context of what we are designing, then it is difficult to have a clear vision. After developing the first prototype, I realized that there were multiple elements of design that I had not included because I did not fully understand the context of my design. So in the second semester of the year, I redesigned the project based on the student's needs and concerns from the first semester.

Overview of Methodology

This applied project incorporates a blended model of learning based on the Cognitive Apprenticeship approach in a High School Photography studio. Designed for authentication through the actual practice of art production; the studio is versatile and allows students to work independently and in groups with the support of the instructor.

The instructional methods blend traditional face-to-face instruction and demonstrations with an online multi-user network interface. The collection of data includes student surveys at the quarter and semester marks. The grades recorded in the Gradebook, hereafter referred to as marks, are representative of the student's development of skills, artistic productions, and knowledge retention. The project was continually monitored and adapted based on the collection of data and the need for diversity and accessibility accommodations.

Research participants consisted of 55 high school students in grades 10, 11, & 12th who were enrolled in a High School Photography I Course. The course taught both traditional film and basic digital photography. The prerequisite for this course is Art I, fundamentals of visual design where students learned the basic principles and elements of aesthetic philosophy.

Implications

The process should be designed to increase self-regulation through intrinsic mastery motivation. The use of technology in co-operation with the lesson plans should develop divergent thinking in the areas of flexibility, elaboration, originality, and fluency. Technology has changed how students think and how they process information, computer based instruction utilizes the skills student's have developed as digital natives. (Krooss, 2013a)

The Visual Learning Environment (VLE) provides access to the course content at all times, increasing student & parent accessibility. It functions as a tool for personal development, providing students with additional practice designed to improving proficiency and mastering concepts, preparing the students for assessment.

An additional implication for the program includes design options for use by home-schooled students, online education, after school programs, library and museums education.

Chapter 2: Literature Review

Educational Technology

Influence of Technology and Learning Effectiveness.

The influence of the use of technology on student outcomes in a blended learning context (2013), is a report that gaged the effectiveness of the blended model on first year undergraduate students at the University of Granada in 2010. The research includes instructional variables of time, financial obligations, and teacher bias. Additional research could indicate the number of students who dropped the course. Another weakness I found was the understanding that final marks were insufficient variable for conclusive results. This article is directly relevant to understanding the blended model and the relevance of the student learning experience to the project.

As secondary resource article, *13 blended learning uses in K-12 and college classrooms* by Riddell, R. (2012) gathered information from multiple research sources on blended learning. The article enumerated 13 overarching uses for technology in the classroom and provided resources to support each use. This was helpful in understanding the context in which the design would function.

However when designing we should think in terms of effectiveness. In *A comparative study of the learning effectiveness of a blended and embodied interactive video game for kindergarten students* (2013) is a study that uses blended learning by introducing gamification to Kindergarten students. The students enjoyed the experience and it increased their self-confidence and relationship skills. The use of visual education is pertinent to my focus in visual Arts, however age and developmental skills vary

between Kindergarten (Preoperational Stage) and High School (Formal Operational

Stage) students.

Instructional Design

   Learning Science & Instructional Design.

    In a eLearning Environment there is much more interactivity and the focus is on

the user interface while the online course usually is more focused on marketability and

providing a service. In *Contexts of Instructional Design, The Journal of Applied*

Instructional Design (2011), Gibbons cautions us to be more aware of the specific

purpose of the design within this context. This helped me think about how I presented my

content in the place of context. Up to this point, I have been more focused on the learning

sciences as a basis for my design. I was following a strategy-centric focus. (Gibbons,

2003) In this sense I feel that my algorithmic methods based in learning theories create a

set of rules that I follow to ensure transference happens; however I was not fully

considering the multi-user context (Edmodo) in which my course was being developed.

This adjustment was corrected in the second prototype.

    Broadening our foundation for instructional design: Four pillars of practice.

Educational Technology (2005) provides us with four contextual areas within

Instructional Design entitled "pillars": the individual, the outside connection, the value of

context, and Aesthetics. Looking at the four pillars I can see that the needs of the

individual have been met within my design by considering the developments of schemas

and providing instructional guidance, thinking about aesthetics is common for me as an

artist who is concerned with the user interface; however, Wilson (2005) asks us to go a

bit deeper and consider outside connections and the value in the social & political contexts.

Blended Models

Learning Light Limited is a group of agencies that are dedicated to eLearning and technology applications. In their report, *What is blended learning and why is it still so important*? Learning Light Limited identifies the differences between online & offline learning concepts and uses this to explain three models of blended learning: Models A, B, & C. Model A being the most relevant to my research is an eLearning model surrounded with human interaction. It allows for consistency and continuity and often a high personal interactivity to help learners to master a skill set.

Using these three models they provide 5 keys to be effective: Strategy, Design, Create, Deliver, & Evaluate. These strategies are delivered in a linear algorithmic process beginning with Strategy, the framework of the Learning Model and ending with Evaluation. Very little evidence was provided in support of their design models. Dr. Celia Richardson originally wrote the article but no information was provided on who updated it for their report. I feel that the design process is not linear but more "Role Based" where the designer continually shifts through roles throughout the design process. (Hokanson, miller, 2009)

In 2011 Kineo compiled all of the research they had conducted up to that point and designed an eText titled *Learning models: Useful blueprints for eLearning designers*. This article provides learning designs based off of their research at the time. It compares the different models of learning and how to build the learning design for each model. In

addition it helps you decide the model that best suits your needs. This was helpful in understanding multiple models and their applications.

Current Use in the Business Model.

Kineo's (2013) *Blended learning-current use, challenges and best practice, Report 2013* is designed for business use but the findings are applicable as generalized understandings in learning. This report did extensive questionnaires across the United States and searched for generalizability. They identified what was and was not working and discovered that employers found that blended learning improves performance and is an effective means of increasing learning retention. The executive summary identified 5 key conclusions.

1. Overall Blended Learning has been "Well Established" but not "Well Blended"
2. In general companies focus on the learning objective with the companies framework. However rarely do they follow-up with the return of investment for the development of the Blended Learning module.
3. There is high expectation that the instruction will move from a Blended model to a completely Virtual model.
4. Rarely do they have internal experts to design and manage blended learning.
5. Despite the clear success, there needs to be a more structured process for designing an effective blend.

This article, though focused on blended learning in corporate enterprises, is still useful in considering the developing a blended model for my classroom.

Student Learning Experience

Problem-based learning: Student learning experiences and outcomes (2014) looked at student learning experiences through two case studies based on Problem Based Learning. The first study asked students to answer questions about Problem Based Learning, what it is and how it is organized? The next study relied on pre-test and post-

test surveys to test learning outcomes. This study is extremely relevant to my research methodology on student learning experience. This offered a student centered approach to teaching and learning, where students take responsibility for their own learning. The measure was based on knowledge assessment of long term, short-term knowledge, and performance of skills acquired. The research shows that Problem Based Learning was most effective for transference to long-term memory. However there were three characteristics of students that affected their overall learning experience and led to qualitatively different outcomes, the student's perception of context, their approach to learning, and learning ability. This study encourages me to think about the student's perception, their previous knowledge, experiences, and understandings. It asks me to consider the students learning styles, motivation, and quality of retention?

Examining the mediating role of learning engagement, learning process and learning experience on the learning outcomes through localized real case studies (2014) was designed to measure student engagement in skills, emotions, participation, and performance against the students approach to learning. The most relevant thing in this article is the methodology comparison. The study found that the focus groups were not comfortable discussing their learning experience to the group, however the web questionnaire was highly effective. This is relevant to the design and application in measuring student-learning experience in the classroom. In the first semester students were handed hard copy surveys to complete. In the second semester the surveys were produced through Google Forms. In this same instance the web survey was more popular and was more affective in processing reports.

The module was designed on a constructivist theory that explains how learner's knowledge is constructed by use of human experience to form information that makes sense to them, with the intent to increase motivational value.

> Student engagement is considered as a solution to increase academic motivation and accomplishment. Students are engaged when they feel involved in their education; they show this by their willingness, need, desire and compulsion to participate in their educational experiences. (Nkhoma, Sriratanaviriyakul, Cong, & Lam, 2014, pg. 289) (as cited in Bomia et al. , 1997)

Motivation is key factor in the development of student-centered approach to learning. Knapp (2008) postulates that to increase the value we need to "redirect their motivation, by restructuring the situation and/or helping them see the rewards and risks of the situation, and their own capabilities, differently." When students understand the value of learning they develop motivational value and expectancy. The student sees the value of the content and reforms their view of their capability to achieve the goal, fostering self-efficacy. Connecting the student's personal interests and teaching the value of the information is not easily accomplished and often takes time and conscious preparation.

What and how do designers design? TechTrends (2003) helped me to consider my content and how to further deliver the information and develop motivation through interaction. In this report Gibbons (2003) proposed four models of design that have roots in architectural design concepts. Gibbons says that Architects see a building not as a singular project but layers of projects all put together. In this analogy he provides four layers called Centrisms. The four centrisms are labeled as follows: Media-centric, Message-centric, Strategy-Centric, & Model-Centric.

The Media-centric design focuses on the instructional medium, while it's counter part Message Centrism focuses on cognitive encoding and transference. The other two

are a little trickier to follow. The Model-centric system uses previous models of design that already is in use around the subject matter. The Strategy-centric design uses rules to govern the delivery of compartmentalized information & interaction. So in reflection, my focus was more on the strategy-centric model.

Actively Engaging Visual Learner's Online (2011) provides a case study for higher education in Art Administration. They explore how to design and sequentially organize the information using cognitive and social constructivism through modeling and visual cues. It builds upon the collection of multiple research reports based on reflective practice, however there is very little mention of the methodology. This model helps educators gage the learning experience and develop curriculum that better meets the needs of the students, "a methodology of learner supported systems…"(Coleman, Rourke, & Allen, 2011, p. 138).

Chapter 3: Methodology

Research Design

As the architect of this course, there were many options to consider prior to beginning; however I am much more conscious of these after the first two prototypes. Prior to developing the first prototype I developed the following blended learning model.

Using the Edmodo's multi-user system, I began designing the Learning Management System (LMS) as the Visual Learning Environment (VLE) in a bottom-up approach. Edmodo would serve as a tool for resources and references of all materials. An archive of lectures and any information relevant to assignments would be available online to the students at any time during the course for use inside or outside of the classroom. In the classroom students were assigned a MacBook Pro laptop to complete assignments, research, and access Edmodo.

Synchronistic instruction through lectures, discussions, and demonstrations took place at separate intervals of the process during the assigned class time allowing more one-on-one time with each student. Asynchronous instruction was available both inside and outside the classroom and was a vital tool for students who had missed class or were homebound.

At the beginning of each semester I collected demographic information about the students to help me surmise their learning styles and interests to increase motivation based on interest values. An anonymous survey was completed at each quarter mark, including the end of semester. These surveys were designed to evaluate the students experience and compare them with their final marks. The data was then compared to that of their peers and evaluated against all other data collected.

Artistic production would also create a visual record of the student's comprehension of the technical use of the camera and was recorded through their marks based on the assigned rubric. The Edmodo Learning Management System (LMS) collected basic data and produced progress reports; however the progress reports were redundant and reflected the student marks produced in the Gradebook. I would have liked to compare the time spent online against student activities: completing an exercise, project, homework assignment, or studying. The Gradebook data was essential to comparing student marks against the data collected.

The course was monitored through mixed data collection of qualitative and quantitative methods. As the course developed, I monitored and reflected on the data and in rare instances, I changed the course of the study when it seemed highly ineffective. At the end on the semester I evaluated the data gathered and postulated a new Visual Learning Environment (VLE) that was more focused on the asynchronous format.

Participants.

Research participants consisted of 55 high school students in grades 10th, 11th, & 12th who were enrolled in my Photography I course. The course taught both traditional film and basic digital photography. The prerequisite for this course is Art I, Fundamentals of Visual Design. Due to a misunderstanding, there were several students who were put in the class who did not take the prerequisite; this had a negative correlation with their final marks.

The class size was limited to 20 students per course. The original number of students in the study was numbered at 58. Three students withdrew from the course mid-semester and were not included in the study. Five students, two the first semester and

three the second had extenuating circumstances that negatively affected their final marks. Over the course of the year, there were 48 females & 7males included in the study. The first prototype consisted of 38 students and only 17 in the second prototype. The participants were randomly determined by enrollment in my course.

Accessibility.

In the recent review by Rieber & Estes (2015) my concepts were expanded when it comes to accessibility. In this manuscript, Rieber & Estes identified 4 levels of Accessibility: Social, physical, intellectual, and motivational. Often when we think about disabilities and impairments rarely does my mind move into the concepts of social, intellectual, and motivational. Usually what comes to mind is the physical and emotional. Physical accessibility affected 1.8% of my student sample that could not utilize the enlargers in the darkroom or properly function the camera. These individuals had to use adaptive technology to type and work with digital photographs. Homebound students comprised 3.6% of the sample and benefitted from the online access. Other physical accessibility diversifications were made for 14.5% of the sample based on 504/IEP requirements.

Social Accessibility refers to socio-economical context in the classroom. Having a blended classroom where much of my instruction happens online there are students who do not have the same asynchronous access as many of their peers. These students may have access at the media center in the school or a public library, however many of them cannot come early or stay after school, they may not have transportation or they have a job requirement. This affected 3.6% of the students in this sample and also reflected negatively in their final marks. I believe the negative reflection was based more on the

student's motivation than required diversification. The course was designed to allow sufficient use within the allotted class hours, therefore self-motivational factors prevented these students from being on top of the course. The only requirement outside of class was taking photographs. Students who exhibit difficulties with Social Accessibility often do not make themselves known and do not wish to be singled out. I quickly learned to monitor the students in order to quietly provide accommodations. In addition 1.8% of the sample was non-native English speakers, additional time and diversification of the units were required; however, it made it easier for the student to use online translation of the course information.

Learning access is a combination of intellectual access and motivation. Intellectual access identifies the cognitive ability of the learner to comprehend the information. This could be the level of complexity or simply cognitive ability. Motivation happens in many ways... often it requires the learner to understand the value of what they are learning or it means that their "view of ability" may show signs of "learned helplessness" when they do not feel that they can learn the content. The process of the blended model overwhelmed several students since it was different from the normal instruction they receive. Extra time was spent with these students to increase their view of ability. Once I walked them through the process they became comfortable for them. In the second semester I included a short lesson on how to use the technology in the classroom.

Instructional Design.

Students are provided structured cooperative learning that is scaffold, based on academic standards set for secondary education. These lessons are designed by breaking up larger

assignments and formatting them in a way that students can build upon prior knowledge, where knowledge is constructed.

To assist with this, the students are provided graphic organizers designed for elaboration and organization, which promotes encoding and transference of the content. Different media is used to present the information in different ways, including interactive presentations designed to support the graphic organizers, online exposure tools, and videos.

Instruction in both synchronistic and asynchronous formats are designed for transference through a cognitive apprenticeship model:

1. Authentic Task
2. Scaffolding
3. Modeling
4. Coaching
5. Fading
6. Articulation
7. Exploration

Some additional Considerations made during lesson planning include.

- Structured cooperative learning
- Graphic Organizers & Outlines
- Vocabulary Lists
- Elaboration & Organization
- Study Questions/Knowledge Check
- Checklists & breaking up big assignments
- Video Demonstrations to assist audio and visual learning

The lessons are constructed spirally to build upon the knowledge gained and skills developed throughout the course. Photography is a very technical art and requires functioning knowledge of equipment, supplies, and chemicals.

Unit Structures.

Classwork and Homework.

Classwork/Homework allows the students become more familiar with the information provided in instruction by having them organize their notes with the most pertinent information through graphic organizers. Each day new instruction is added to the previous instruction. The graphic organizers account for 25% of the overall class grade.

Exercises.

Exercises are designed to improve retention through elaboration and organization of the materials. Here the students apply the information in an authentic task modeled by the instructor though presentations and video demonstrations. This is vital for the student to make connections in the application of the learning objective and to other disciplines. Exercises account for 25% of the overall grade.

Projects.

Projects are the most important aspect of the lesson plan. It is the accumulation of all the information the students have developed to this point in the semester. At this point fading occurs as the student takes more responsibility in the development of their product modeled by the instructor in the exercises. The instructor is available to coach and provide assistance but the work is the responsibility of the student. This is where the student should make a connection to the professional development. In a professional field you would have deadlines and have access to resources to produce the required project for the deadline. This acquaints the students with real life agency in a professional field. Projects account for 35% of the overall grade.

Testing.

Testing is designed for articulation of knowledge retention. Here developing study skills are more vital than the actual recall of rote information. In the professional world,

awareness of knowledge is important; however there is always access to this knowledge. So it is vital that the student have knowledge and comprehension of the content. The test should be constructed to be just difficult enough for the student to work on "recall" and "reasoning", yet not too difficult to be discouraging and developing learned helplessness surrounding testing. Testing should also familiarize students with the stress and experiences related test taking or work ethics. Tests account for 15% of the overall grade.

Rubrics.

Each unit is assessed using a rubric based on the requirements of the assignment and the student-learning objective. Students are often asked to use the rubric to evaluate their work in a metacognitive reflection so that they are aware of areas that they need improvement. We also review tests and discuss the areas they need to focus. The student's scores are a reflection of the their ability to meet the requirements of the assignment. In the event that a student appears to be struggling with the material I offer for them to contact me and set up a conference time via Google Hangouts. As a general rule students struggle to grasp new concepts but often gain understanding when presented in another perspective.

The Prototypes

The Frist Prototype.

Having arrived at a concept I needed to synthesize solutions and design the first module. For this to happen, it was necessary to envision the design and begin working out the details based on the available tools. Edmodo is the online multi-user interface that my school district uses for this function. However at the beginning of the year we moved to a

Google centric access. Google email, classrooms, Docs, Sheets, and forms started assimilating into the system and were integrated into my second prototype.

Interactivity in Edmodo allowed for announcements, assignments, quizzes, and folders. In the first prototype, folders were created with PDF documents of the presentations, graphic organizers, and any other supplemental material, only supported the use as a resource of information. The initial interactivity was very low since all of the materials were printed and available in the class at the time of lecture. However most of the exercises and quizzes were completed online and submitted through Edmodo.

Edmodo was not being utilized to its full potential.

The Second Prototype.

In the second semester I increased the use of technology and flipped the instruction. Daily Agenda's were posted on Edmodo's timeline each day and was posted on the white board prior to the students entering the classroom. The daily agenda provided an outline for not only the day, but all necessary information: the bell-work intended to be started by the time the bell rang, announcements that included upcoming due dates or important information about the course or class, a step-by-step review of the content, followed by introduction to the new content. The intention was to keep students organized and aware of where we were in the course.

The graphic organizers, designed to take notes, were converted into PDF forms that could be completed on the laptops and printed if desired, printed copies were available for those who preferred to take written notes. The graphic organizers accompanied by a copy of the lesson presentation were posted as an assignment on the Class's Edmodo timeline a day or more before they were presented. Once completed the

graphic organizer were saved in the following format

"last.name_graphic.organizer.name" then attached to the assignment drop box.

Students were asked to complete the graphic organizers up to one day in advance.
The following day the content would be presented, followed by classroom discussion.
The intention was that students would have reviewed the information prior to discussing
the content. The students were expected to have prepared questions about the material to
encourage dialogue and peer discussion. However many students arrived to class without
completing the assignment, their intention was to complete the assignment during the
lecture. This did not encourage class discussion since the students had not reviewed the
information before class despite the allotted time the previous class day. In this design I
had failed to focus on student accountability and motivation. I needed to increase
motivational value and clarify expectancy.

All exercises and project were also posted as assignments with PDF forms that
could be attached to the posting, including the metacognitive reflections and self-graded
rubrics assigned for each. A classroom assignment box was provided for submission of
film negative sheets and photographic prints that could not be submitted digitally. Digital
photographs were submitted through Mac's AirDrop feature in a folder with the student's
name and assignment.

Unit reviews called Knowledge Checks, quizzes, tests, and exams were developed
in Google forms. Once taken and the student submitted the form, it was available for me
to view the responses. Prior to grading I could also review a summary of the responses.
This provided me with pie charts of how students answered overall. To grade the
assignment I used the Flubaroo add-on. It would allow me to choose which questions to

score, identified the student, or skip grading. The skip grading function was convenient when above 60% of the students got the question incorrect. Unless it was one that they should have known with certainty, I could remove it from the exam. To grade the form I had to take the test to create a key that it would use to complete grading.

With the increased amount of technology I incorporated a training segment at the beginning of the course. This training was to introduce the student to the technology and help them develop the skills required to interact with the educational technology.

SEMESTER 1

A
B
C

21.6%

16.2%

62.2%
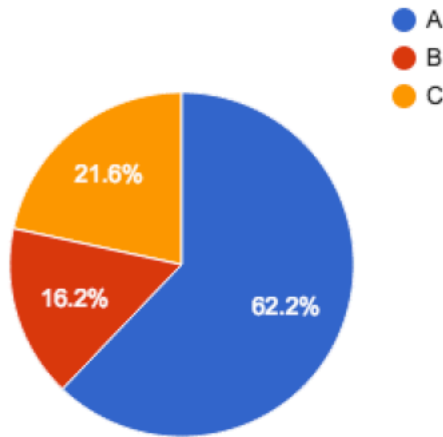
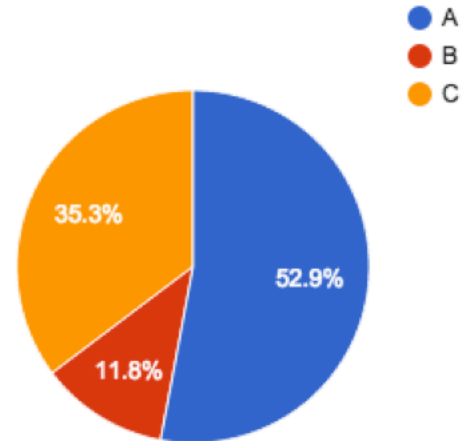**SEMESTER 2 Final Marks**

A
B
C

35.3%

52.9%

11.8%

Fig. 1

Results

Comparing Fall Semester 1 and Spring Semester 2 there is a 10% drop in students with

an "A" average and an increase in students with a "C" course grade. (Fig. 1) As stated

earlier there were two courses in the first semester with 38 students and a single course of

17 students in the second semester.

The second semester had the largest amount of students with accessibility issues.

End of the year testing was a constant interruption and student motivation was highly

affected and they were exhausted at the end of the day. The second semester also saw a

dramatic decrease in classwork grades and in correlation the test grades lowered. This

encouraged a high level of work avoidance. However there was an increase in exercise &

project grades.

Overall the grades the grades were high and the student survey responses were

very positive. Student's loved the integration of the technology in the classroom, with

about one student in each class who preferred the traditional method. When explaining

why, they appeared intimidated by the change from the traditional style in which they were familiar. (Fig. 6)

Student response to the use of educational technology was overwhelming with 54.5% of the students stated that it was "very effective" and 45.5% stated that it was "effective". No other option was selected from the following categories: "somewhat effective" and "not effective". (Fig. 2) When asked how effective is the computer o complete your assignment, 54% stated that the computer was a "highly effective" way, 18.2% "very effective", 18.2% "effective" and only 9.1% not answering. No response was posted in the "less than effective" category. (Fig. 3)

When asked about the student's ability to focus on the assignment, only about 5.6% responded that they were distracted by social media online. (Fig. 4) Despite this being an anonymous survey, I know the percentage should be much higher.

When asked about the online usage, 63% stated that they use it as a study tool and a resource when they were absent from class. About 54% of students admitted to only using the online tool to complete assignments in class.

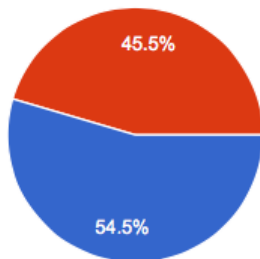**Do you feel this is an effective way to learn the material?**

Fig. 2

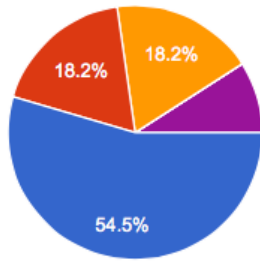**How effective is the use of computers to complete your assignments?**

18.2%
18.2%
54.5%

Fig. 3

How focused are you on when working on your assignment?

61.1%
33.3%

Fig. 4

How is Edmodo used as a resource?

Notifications
Assignments
Quizzes
Study Tool
Other

0.0   2.5   5.0   7.5   10.0
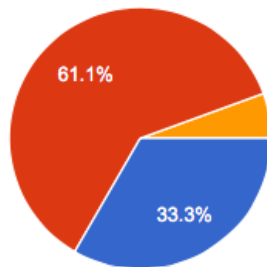
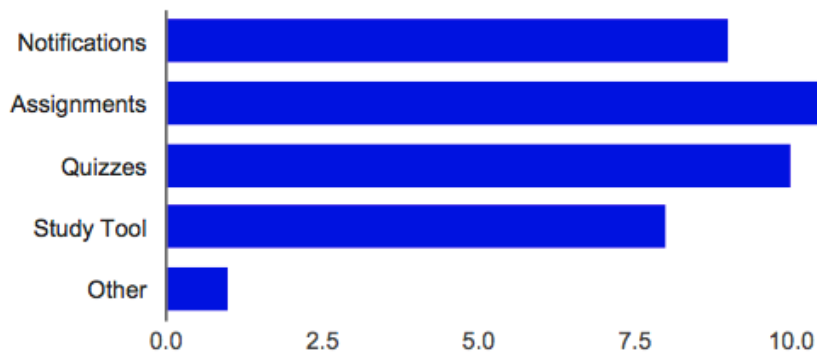**Fig. 5**

When asked about the use of the online software I was excited to see the survey responses reflect the designs purpose.

Examples of Student Responses.

How does the blend of technology and instruction help you with understanding the class materials?

I have the notes right there if I need them

Using technology is easier and you are able to get stuff done on your own time on any computer

It makes the class very hands on and easy to access and make up work.

yes, it was very help to get worksheets done without any loose paper that often disappears.

its a broader source

It helps one move at an individual pace.

It helps to use technology because its more hands on and independent to learn from.

I don't like typing my notes on the computer. I rather write them cause you learn better when you write the notes.

I understand photography a lot better than I would without having technology

Having hands on experience as well as online resources together help much more than just a textbook and lectures

technology has more resources i can use to understand more

Fig. 6

Chapter 4: FRAMEWORK FOR A NEW DESIGN

After a year in developing the blended model, I found myself in the area of uncertainty. I was initially so certain of my idea and the design of my lesson, however after working on it, I became concerned with the results of the student's learning experience. It seems that my concept, though meticulously designed through learning theory was not well adapted for it's context; therefore, I have decided to develop the course through an educational authoring tool. There are five areas I would like to focus on as a result of the findings.

The first area of concern is in the area of accessibility. I would like to ensure that the new design is compliant with Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. § 794d).

In several of the surveys students found that they had difficulty with adaptation to the new learning design. These students did not like the change from the traditional format of education and required coaxing to help them see the value in this new model of education.

The third area of concern, is the student's computer literacy. As a digital native students have developed skills in the use of the applications but not the skills required for fixing basic computer problems. Many of students cannot operate general applications to produce portable digital files, word documents, spreadsheets, and presentations. Though this was incorporated in my second prototype, it could be better defined in the newest design. Students would also benefit from a module on how to effectively organize files.

The Daily Agendas developed in the second model helped with the fourth area, Time Management and Organization. The students required constant reminders to help them keep up with assignments. This could be taken a step further and built into the

program. Perhaps a multi-user calendar set up to automatically send reminders through the schools integration of the Google Educational Platform. The online tool at Remind.com, formally known as Remind 101 allows notifications to be scheduled and sent out as text messages to the students with accessibility to smart phones would make a good addition to the framework.

Self-motivation is critical to staying on top of any course. Students were easily distracted from their assignments by social media networks. The new framework should incorporate new ways to help students see the value in the content to prevent distractions and stay focused on their assignments. Students must believe that the content is important and develop an intrinsic understanding of the content's value.

Each of these falls under the category of interactivity. Using the interactions available through the technology, I am now working to develop ways in which to increase the interaction of the learner. So that the learner is engaged, motivated, and organized.

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Appendix I

Prototype 3

Using Adobe Captivate 8 as an authoring tool, I designed Unit II following the

Framework for a New Design. Unit II is based on the parts and operations of an SLR

Camera. Using Google Drive as a Web Host I published the course to my website. The

course is private but available through the following link for you to view. This course is

the continuation based on the findings of my applied project.

Link to my website that hosts the current project.

http://www.tjkrooss.com/photographycourse.html

Links to individual lessons

      Lesson 1: The Camera.

https://googledrive.com/host/0BzYmi4-L610ffmxsMTI2LVRvU1J0QTRXcjFxblU4YVpia3BSVW9mNk1xdmZxNms1dXAzd1E/index.html

      Lesson 2: The Shutter.

https://googledrive.com/host/0BzYmi4-L610ffjM2VGtVRXYzWUtySmlVczAtWUlnMDNOOWJiV0JXQ3ZJZ3lUUW9yZmJwSms/index.html

      Lesson 3: The Aperture.

https://googledrive.com/host/0BzYmi4-L610ffmxDMFJVSm9aN1Q1N2NzZ1RvY3ZsR1hLTERad1NMWFFucFl5bTZYSXphVkU/index.html

      Lesson 4: Manual Operations.

https://googledrive.com/host/0BzYmi4-

L610ffjUzeC0tX1dzam1aSjV2SVRBdk81QUVVQ0Y5ZkgtUUFqWDlOZVpUaVNBd0

E/index.html

Lesson 5: The Lens & Film.

https://googledrive.com/host/0BzYmi4-

L610ffnEzaGJ4dWJ2SGJBUDJCR0s3bjlyX0ZuR2Fab3NDakFLMU0tblhSMUdNTFE/i

ndex.html

Accessibility in Adobe Captivate 8:

I had to research Accessibility in Adobe Captivate 8 but and was able to make the last

adjustments prior to publishing.

https://helpx.adobe.com/captivate/using/creating-accessible-projects.html

Appendix II

Technology Survey
https://docs.google.com/forms/d/1jD5AgpgpFxxj_v4MI_8Bj9LSZ1tCe5FaYzjn5U1bCMM/viewform?usp=send_form

Technology Survey

This class is a mix of traditional face-to-face educational practices with educational technology. Research today states that blended educational environments can help us meet the diversified needs of students by mixing different forms of media & resources designed to improve retention through elaboration and organization of the student-learning objective.

Please complete the following survey to help me to better your education.

Please answer honestly. This information is completely anonymous you will not be identified.

What grade are you in?
- ○ 9
- ○ 10th
- ○ 11th
- ○ 12th

What is your grade in this class?
Estimate
- ○ A
- ○ B
- ○ C
- ○ D
- ○ F

Continue »

Technology Survey

Technology Use in the Photography Classroom

What types of media and technology are used in this course? Include all you can think of... examplesRemind 101, camera, film, darkroom, computers, applications

```
[                                                    ]
[                                                    ]
[                                                    ]
[                                                    ]
```

Describe the use of media and technology in this class.

How is technology used in this classroom?

```
[                                                    ]
[                                                    ]
[                                                    ]
[                                                    ]
```

How is Edmodo used as a resource?

Check all that apply. In the other box, please list other uses.

☐ Notification

☐ Assignments

☐ Study Tools

Do you feel this is an effective way to learn the material?

Explain Why in the next question.

○ Very

○ Yes

○ Somewhat

○ No

How does the blend of technology and instruction help you with understanding the class materials?
Reflect on your previous answer.

Do you think we should use the "Bring Your Own Device" policy in the class?

○ Yes

○ Somewhat

○ No

In what ways do you think we can use the "Bring Your Own Device" policy?

What other technologies would you like us to use in this course? How would we use it? Why would it be helpful?

How effective is the use of computers to complete your assignments?

○ Highly Effective

○ Very Effective

○ Effective

○ Less than effective

Explain your answer: How effective is the use of computers to complete your assignments?

```


```

How focused are you on when working on your assignment?

○ Very Focused

○ Somewhat Focused

○ Distracted by other websites & applications

How do you use online resources?

☐ I use it to study.

☐ I use it to see what I missed when I am absent.

☐ I only use it to complete the assignments when I am in class.

How motivated are you to use the online assignments versus written?

☐ More Motivated

☐ Same

☐ Less Motivated

Considering art is more personal and individualized source of creativity, is the lower amount of interaction will help you to produce more original work?

Knowing I will be able to help you one-on-one as we move into the studio this next week.

```


```

How is technology used in your other classes?

[text box]

application of technology in other classes compare to this course. Effective?

[text box]

If you have any additional comments about the use of technology in the classroom please respond here.

[text box]

« Back   Submit

Never submit passwords through Google Forms.

Online Research

Learning Light.

http://www.learninglight.com

This is an agency or a group of agencies that are dedicated to eLearning and technology applications. They research the new technology as well as develop new systems. They work as a consulting agency and develop educational programs on eLearning, including the blended classroom.

The research they produce measures the effectiveness of technology in training and education. This provides a resource that may be generalizable and applicable in the action research of applying technology to the student classroom.

Kineo.

http://www.kineo.com/us

This is business website that does research and case studies for workplace learning with the intention to improve performance through technology. They provide both services and solutions such as consulting and research in blended program development.

They have one researcher on staff Mark Harrison who focuses on the research in blended technology. His research focuses on the design of blending technology with face-to-face instruction. I have used the following two articles:

Designing Blended Learning.

http://www.kineo.com/us/resources/papers-and-guides/learning-strategy-and-design/designing-blended-learning

Blended Classes Today: Designing in the New Learning Architecture:

http://www.kineo.com/m/0/blended-learning-today-2014.pdf

The Dana Foundation.

http://www.dana.org

This is a private organization dedicated to the research of the brain and mostly focused on cognitive learning and much of their support comes from educational programs. They work on grants and provide free publications through their website and public education programs. Many of their researchers work with universities to keep up with the most recent studies in the field.

They do extensive studies on how the Arts affect the brain. This has been important in my research on developing sustained motivation in the technological era of students today. Their reports have provided ways in which passion in the arts creates the ultimate state of motivation that has been identified as "flow" as researched by Mihaly Csikszentmihalyi. Their research has been my keystone in connecting art with cognitive research and taking the next step to cognition in eLearning.

Multi-User Interface Systems for Schools

The Khan Academy.

https://www.khanacademy.org

The Khan Academy is an organization that is dedicated to providing free online learning to the world. They are working to change the way education is provided. It is intended to supplement existing classroom education for students & teachers, homeschooled students, and anyone else who is looking to learn or supplement information.

Their design and structure was the beginning of my interest in online learning and the tools they have developed based on the research they have done provides me with a

greater understanding of how to supplement my coursework with online education. They have tools that track student progress that is vital to my action research.

Moodle & Edmodo.

https://moodle.org

https://www.edmodo.com/

This is an open source collaborative online learning platform to create a personal online learning environment. In this environment the student can experience the full instruction from power point presentations, videos, formative and summative assessments. The program can be downloaded onto a server and function in a network with or without having online access. One drawback, it requires that you have a server to function the software, without you must find a supporting partner to provide a server for you.

This is a complete classroom environment. This would be the preferred eLearning method for blended classroom design. Where the students would take instruction and non-studio assessments. In addition the students would be able to review materials at any time or if instruction is missed they have access. They can login from a remote computer at home or public/student access points. The students can have blogs and discussion boards where the students can respond for critique and aesthetic inquiry.

Video learning platforms

Mobento.

http://www.mobento.com/aboutus/

Lynda.

http://www.lynda.com/member.aspx
http://eits.uga.edu/learning_and_training/lynda/