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A Visual Understanding: An Interactive Learning Application

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Abstract

As a thesis project, A Visual Understanding can be defined as a contextual experiment portraying the relationship between traditional composition techniques and visual communication online. This project focuses on the issue of significance when viewing photography online and the ways in which Computer Graphics Design can solve this problem. The educational application address the problems with the way in which photography is being portrayed by first, creating awareness about this concern and second, educating the online user in attempt to solve this problem.

The interactive application developed educates users on traditional composition theories that have proven to be successful means of communication. This project displays information in an online application, and develops a way to engage web users. The goal of this application is to provide amateur photographers with an understanding of visual communication and the ways in which the relationship between composition techniques and design theory can significantly impact photography.

This project goes on to explore different means of information design and contextual, three-dimensional interactive applications, and researches the ways in which the use of computer graphics design to create a hands-on learning experience will increase awareness and educate amateur photographers. By providing an educational understanding of photographic design theories, discussing lines, shapes, angles, and frames in an interactive atmosphere, web users learn photography techniques in a hands-on manner instead of simply reading about rules or techniques.

The intention of this project is to visually, interactively, and contextually represent the potential for photographs to provide entertainment, embody visual art and culture, and provide compositional representation of meaning and message to their audiences. Through the demonstration of the effectiveness of these theories as well as the importance of visual communication, amateur photographers will learn how to create visual meaning in photographs and learn why they should be aiming to communicate messages through photography as a traditional art.

Thesis URL

<http://thesis.firstnamejoanna.com>

Table of Contents

1. Introduction

- 1.1 Problem Statement
- 1.2 Research Process
- 1.3 Awareness
- 1.4 Education
- 1.5 Application

2. Survey of Literature

3. Process

- 3.1 Parameters
- 3.2 Design Considerations
- 3.3 Technical Issues
- 3.4 Troubleshooting

4. Methodology

- 4.1 Usability Testing
- 4.2 Testing Results
- 4.3 Audience Feedback

5. Conclusion

6. Appendix

- 6.1 Thesis Proposal
- 6.2 Usability Survey

7. Documentation

- 7.1 Text Resources
- 7.2 Online Resources
- 7.3 Inspiration
- 7.4 Bibliography

1 Introduction

1.1 *Problem Statement*

Problem Statement

From my point of view as an amateur photographer with an educational background in photography as a visual art, I see a twenty-first century issue that needs to be addressed when it comes to communicating with, sharing, displaying and viewing photography online. Since the advent of the Internet and digital technologies, the representation of photography online suggests that there are more amateur photographers posting their work than professionals. Because of the growth of photography as a hobby, as well as the increase in the representation of photography online, the definition of photography as a traditional visual art is changing. I believe that through awareness and education, an interactive application will help to change this pattern.

As stated, because of the increase in popularity of communicating online, many web users have taken to posting their photographs in web communities and blogs for the world to see. The problem has arisen that since any user can post photos in these public web environments photographs are being displayed and evaluated without traditional, professional or educational context. Posting photos online seems to be a trend that is both popular and permanent. Seeing as the Internet is now being accepted as an appropriate visual medium for displaying photographs now is the time that awareness, understanding and instruction need to be available to amateur photographers.

I see addressing this issue as challenging, because of the magnitude of the problem. There is an enormous lack of understanding when it comes to viewing photographs that are encountered on the Internet. In some web communities, photography is no longer being viewed as traditional visual art. This is because we are not only inundated with photographs online, but we are becoming overwhelmed and disinterested. There is not only a lack of understanding from a visual literacy perspective, but a contextual, educational standpoint, as well.

I believe that awareness should be raised specifically among amateur photographers involved in displaying photographs online within web communities such as Flickr and Photobucket. The focus of this thesis will be to convey the importance of the traditional rules of composition as related to photography as a visual art by developing an online application targeting amateur photographers. In order to portray contextual ways to evaluate online information, aspects of visual literacy and visual communication will be addressed. Through the development of an interactive application I plan to educate and motivate photographers to embrace traditional composition guidelines in order to effectively communicate visual messages.

1.2 *Research Process*

Overview

With further research, I reinforced my belief that an online application focusing on educating amateur photographers about traditional theory and the rules of composition will create awareness about the importance of these traditional visual art practices. Various references support the theory that photographs are more effective as they relate to and replicate traditional theories and compositional techniques. Many articles that I read proved the theory that all elements of visual design can be both informative and engaging.

In order to complete this project I not only researched methods of online interactivity, display, communication, and design; I also researched the rules and guidelines of traditional photography and composition as to decide which content to feature in the application. Featured in this slide are two resources that I found most helpful, the first text titled “Visual Rhetoric,” the second titled “Visual Communication.”

Most of my research focused on visual communication, seeing as I wanted to provide guidelines for amateur photographers to learn and embrace in order to create images that have more impact, are visually compelling, and create meaning and message. After completing my research, I feel confident in concluding that an online application focusing on the demonstration and application of traditional guidelines will allow amateur photographers to begin see where their skills must improve, and they will be inspired to improve their photographs as well.

Background Information

I decided to focus my thesis project on photography, more specifically, the rules of composition. Today, there are many web users who have taken up photography as a hobby, and the trend is to display or post photos online to share with friends, family, and others. My problem statement outlined that because of the growth of photography as a hobby, the definition of photography as a traditional visual art is not being understood or fully acknowledged by amateur or beginner photographers.

In this case computer graphics design and online, interactive technology provides the ideal environment to target amateur photographers. This application has been implemented in the format of a “dropdown” banner ad. The three sections mentioned: Awareness, Education, and Application are sub categories within this application, each focusing on an element of the educational process. The banner ad that represents the application in an “un-opened” format provides an introduction to the goals of this application and is meant to attract amateur photographers to click, and open this application.

The first category, Awareness, will focus on conveying the importance of Visual Communication and the ways in which photography as an aesthetic, traditional art can relate a specific idea to the viewer by framing and communicating meaning or message. The composition and context demonstrated in photographs can showcase the isolation of the subject matter in the appropriate visual and compositional style.

Traditional composition, contrast and perspective techniques reserve the ability to frame any subject within a photograph, and prove to create meaning and encourage visual understanding, critical thinking, and a message by reflection. By focusing my research on composition and traditional techniques that have proved effective, I will demonstrate to amateur photographers the ways in which they can change how their photographs are viewed and interpreted.

The second category, Education, educates users about, first, "Composition and the Rule of Thirds," addressing elements of Contrast, Rhythm, Balance, and Proportion. Second, focusing on "Framing Content and Context," referring to Scale (Proportion), Contrast and Unity from an objective standpoint, and third, the importance of Horizontal, Vertical, and Converging "Lines and Angles" within the frame. From a visual communication perspective, the application will outline the ways in which Lines and Angles address meaning and specify message within the frame.

Lastly, the application category features a content overview and physical elements of interactive functionality in relation to each other. Functionality includes custom user input, image upload and editing capabilities, cropping, zooming/framing, access to display, three dimensional interactivity and animated motions. The application category will provide the user with a hands-on, human-computer interactive outlet to reinforce the effectiveness of the compositional rules featured. By incorporating physical and contextual, three dimensional interactivity, users will learn to embrace critical thinking and will see the ways in which compositional techniques effect visual literacy, communication and instill meaning within imagery.

Visual Communication Research



Figure 1.2.5 *In order to complete this project I not only researched methods of online interactivity, display, communication, and design; but mostly importantly I researched the rules and guidelines of traditional photography and composition as to decide which content to feature in the education section of the application. When researching visual communication from a contextual, and objective standpoint. I focused on looking up information that supported the idea that 'objective' meaning disregards content and subject matter and incorporates visual theory as it relates to composition, visual symbolism, communication, and persuasion.*

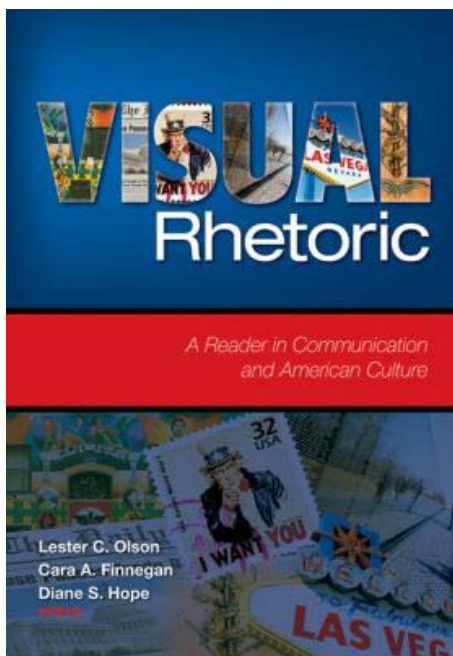


Figure 1.2.6 *Two resources that I found most helpful are shown here, the first text titled "Visual Rhetoric," the second titled "Visual Communication." Most of my research focused on visual communication, seeing as I wanted to provide guidelines for amateur photographers to learn and embrace in order to create images that have more impact, are visually compelling, and create meaning and message.*

Throughout my research there were specific elements of Visual Art theory that I focused on, it was also important to me to include studies and cited principals that supported the theories of design and composition, as well as examples of images that portrayed the same aesthetic design principals. These references I found, which will be cited though out the research paper as supporting arguments, include: Stebbing's Four Organizing Principals, the German 'perceptual psychology' Principals of Gestalt, as well as Rick Williams various supporting arguments proving Visual Theory as effective means of symbolism and communication.

Case Study 1

<http://www.adidas.com/originals>

The Adidas website, a mostly Flash interface, utilizes motion and interaction as a selling tool and resource for displaying information. I specifically choose to focus on this website because of the way the gallery is arranged and the information is displayed.

I plan to follow a similar format, treating the content of this application as highlights or spotlights that will be displayed in a gallery setting. The user will be able to explore information, rather than read through content in a static environment. The gallery utilizes many navigational features that I hope to emulate as well.

Case Study 2

<http://www.squarespace.com>

The Design, Content Organization, and Navigation of this website all seem to have been designed in a very practical way. I appreciate the monochromatic way this interface has been designed, leaving the content to be the main focus of the site.

I also believe that this site has successfully created a typographic hierarchy, and would like to follow a similar structure when illustrating the content in the proposed application. The Navigation is minimal and the visual branding elements are straightforward, I think embodying these qualities when designing the proposed application will allow for ease of use and clarity of intended message, as well as visual understanding.

Interaction Inspiration

<https://www.memolio.com/>

Graphic Inspiration

<http://www.newbalance.com>

1.3 *Awareness Content Outline*

The following information represents the content that will be displayed in the Awareness section of this application. The purpose of this section is to introduce the user to the goals and educational content of this application as a whole, or an experience. In order to outline the goals in a straightforward, yet appropriate manner, the introduction consists of “points” or “bullet points” that the user should be able to read quickly and easily understand. The purpose of the content is to outline the potential of photography as an art and a means of visual communication as well as inspire or motivate amateur photographers to want to learn more about traditional photography and the rules of composition. After reading through this section the user will be introduced to the application’s educational content outlined in the following pages. Both text-based explanations of the traditional rules of photography as well as visual examples of these points will be provided.

A Visual Understanding: An Introduction

As a photographer it is important to consider the goal of Visual Communication when photographing and displaying images.

It is important to develop a selection process and consistently ask yourself whether the composition, frame, and shapes within your image accentuate or add interest to the shot.

It is important to gain an understanding of the creative and aesthetic context of visual communication.

The frame supporting an image verifies foreground, background, and subject and can create varying points of view, statements, or messages communicated through composition styles.

As photographers it is important to embrace the rules of composition in order to create dynamic images, generate interest, and inspire critical thinking.

Audiences have the ability to interpret, negotiate, and make meaning from images.

1.4 Education Content Outline

Educational Content and Graphic Message

The Rule of Thirds

The rule of thirds is a compositional rule of thumb.

An image should be imagined as divided into nine equal parts by two equally spaced horizontal lines and two equally spaced vertical lines.



Figure 1.4.1

Rhythm

Important compositional elements should be placed along these lines or their intersections.

Rollover - Keep contrast in mind in order to create rhythm and balance using light and dark shapes.



Figure 1.4.2

Balance

Proponents of the technique claim that aligning a subject or horizon with these points creates more tension, energy and interest in the composition than simply centering the subject would.

Rollover - Experiment with vertical and horizontal lines when considering how the rule of thirds applies to your subject.



Figure 1.4.3

Proportion

Proportion is an important element to establish background, foreground, subject, and focal points.

Rollover - In this photo, the subject is positioned off center, at the intersection of two dividing lines, therefore taking advantage of the rule of thirds.



Figure 1.4.4

The Rule of Thirds

Traditionally, the horizon will sit at the horizontal line dividing the lower third of the photo from the upper two-thirds.

Flash Rollover - Create a dynamic, interesting image by positioning your subject slightly off center.

Creative Focal Points

Framing is the technique of drawing attention to the subject of your image.



Figure 1.4.5

Color

Photographs that lead the eye towards your main focal point can draw your photo's viewer into the picture just by their shape.

Rollover - A frame can not only draw the eye into a picture but that it keeps it there longer.



Figure 1.4.6

Contrast

Contrasting Colors, or complimentary colors, can be utilized to make the subject stand out against a natural background.

Flash Rollover - Adjust color and contrast to make your subject stand out.

Rollover - Examples of contrasting colors, or complimentary colors, are red and green, blue and orange, and yellow and magenta.



Figure 1.4.7

Shape

Using light and dark shapes, lines, tones, and values within the frame will help to give images a sense of depth and layers.

Rollover - Incorporating blocks of color will define specific areas or focal points within the frame.



Figure 1.4.8

Framing

Framing a shot generally puts something in the foreground, which adds an extra dimension to the shot. Use a foreground frame that is darker than the background. Contrasting elements within an image will establish creative focal points.

rollover - Remember, since you have a foreground and a background you can chose your depth of field.

Lines and Angles

Lines that can be found within images are very powerful elements. Lines add dynamic impact to images in terms of mood, composition, and point of view.



Figure 1.4.9

Vertical Lines

Layers of vertical, horizontal and diagonal lines can create rhythm or patterns in an image that can become the focus of an image.

Rollover - Varying degrees of contrast, tone, and value within a photograph can create rhythm, and balance as well as form shapes and lines within the frame.



Figure 1.4.10

Horizontal Lines

Horizons are the most common horizontal line to be found in photographs and they often act as a dividing point in a photograph. Lines create points of interest as they intersect with other lines and often give images depth by suggesting perspective.

Flash Rollover - Incorporate Vertical, Horizontal, and Diagonal lines to create patters in your photograph.

Rollover - Keep in mind Composition and the Rule of Thirds when you have strong lines in a photograph.



Figure 1.4.11

Lines and Angles

A combination of lines repeated in patterns creates impact. Incorporate a contrasting background with shapes and lines going in different directions to create a visual pattern.

Rollover - Including lines and angles within your composition allows you to create visual focal points and generate interesting, dynamic images.



Figure 1.4.12

Diagonal Lines

Diagonal lines and angles draw the eye through a photograph. Lines add interest, complexity, and a unique perspective to a composition.

1.5 *Application Content Outline*

Finally, the user will be able to interact with his or her own photographs in order to practice what they have learned in both the Awareness and Education sections. The Application section will also feature a “review” of information presented in order to keep the main points available for reference during the interactive portion of this application. The juxtaposition of information and practical application is the most important experience for the users, allowing them to apply what they have learned as well as realize the importance and effectiveness of the rules of composition.

Educational Content Overview

The Rule of Thirds - Summary

Establish background, foreground, subject, and focal points proportionately and dynamically.

Create rhythm and balance using light and dark shapes, lines, tones, and values within the frame.

Focal Points - Summary

Create a dynamic image by portraying your subject as a focal point and framing the scene.

Incorporate contrast and color to give your image a sense of depth and lead the eye towards your main focal point.

Lines and Angles - Summary

Consider three types of lines; horizontal, vertical, and diagonal when framing an image.

Shapes, lines and angles add impact to a photograph by leading the viewer's eye into your photo.

2 Survey of Literature

Introduction

For this Survey of Literature, I wanted to start my search by focusing on the general topic of photography. I tried to focus on articles that related to my field of study, and also related in some aspect to my particular thesis topic. In this case, I knew before I began my research that I would like to specifically find documentation that related to composition techniques, photographs that followed these techniques, and other traditional aspects of photography as an art. Visually, I wanted to try to research the means of effective communication through photography as a medium. Also, I planned to research specific aspects that would pertain to the implementation for my thesis project. This list includes researching topics such as web advertising, pop-ups and widgets, online applications, as well as programming knowledge focusing on Flash 3D. I started my research from the RIT library site, which linked me to the ProQuest database, and then I moved on to researching tutorials and articles in different areas of the web. Trying to vary my sources, I made sure to look up my topic in textbooks, magazines, and I visited photography exhibitions as well.

This survey will help me to begin researching articles that will eventually be noted in an annotated bibliography; the purpose of the survey is to note research that helped to outline the necessary steps for development of a complete thesis proposal. It is important to acknowledge that the research supporting this idea will be objective, meaning it will be visual theory as it relates to composition, visual symbolism, communication, and persuasion regardless of visual content or subject matter. My research focused on the following topics of study, Visual Communication and the ways in which photography as an aesthetic, traditional art can relate by framing and communicating meaning or message, as well as Visual Art theories. I narrowed the Visual Art theories I researched to specifically include Composition and the Rule of Thirds; Framing, and the ability to imply/encourage a definite meaning and message; Lines and Angles, as related to visual perspective.

Final Review

After searching databases such as ProQuest, the RIT Library Journals, other online resources, as well as looking through Magazines, and visiting the Exhibitions at the Eastman House Museum of Photography I have reached many conclusions. At first, I found a lot of information pertaining to photography as a technology, rather than as an applied visual art. Also, some of the information that I read was all based on the opinions of authors, which is relevant, yet not necessary the 'factual information' that I intended to look for. As stated in the introduction, I intended to search for information relative to visual communication through photography as a traditional art. I was hoping to find more relevant information touching on the 'traditional' subjects such as composition, the rule of thirds, etc. however; I feel that I may be looking in the wrong places. As I continue researching this topic, I intend to focus more on relevant surveys and/or studies, theories of mass communication that related to effective visual communication. On the other hand, in the developmental areas of research I feel that I was very successful in finding online resources, and magazine articles that related to my intended topics. I also was lucky to find design inspiration in my search and resources that will help me with remembering usability as a factor in the design of this application.

3 Process

3.1 Parameters

Proposed Solution

My proposed solution to this problem was to develop an application that would target amateur photographers and motivate them to learn the rules of composition and teach them some of the traditional rules of photography in a hands-on way. I developed an interactive computer mediated application, which I have titled A Visual Understanding. This application can be described as a contextual experiment portraying the relationship between traditional photographic theories, composition techniques and visual communication. Essentially, the project that I developed equally focuses on three specific categories, shown in the featured chart. The three categories are Awareness, Education, and Application.

Application Goals

The goals of this project are to increase awareness about the importance of photography as a means of visual communication, and provide an educational understanding of traditional photography. I have developed an interactive application, and using 3-D interactivity my goal was to demonstrate the cognitive effects of compositional rules as related to meaning and message. The most important goal of this thesis project, as an online application is to help increase visual literacy, education and understanding, and motivate amateur photographers to appreciate photography as a visual art.

Target Audience

Motivational level will be one of the most important characteristics of the target user. The user's interest in the subject matter will dictate the investment they have in learning about photography and therefore the relevance of this application to them. I want to focus on narrowing the target audience by interests. Ideally, anyone who is an advocate of photography will be interested in using this online application. More specifically, I would like to focus on targeting amateur photographers. Examples of this audience would include students who have yet to learn the traditions of photography as a visual art, as well as online users that are members of one or many of the various online photography communities.

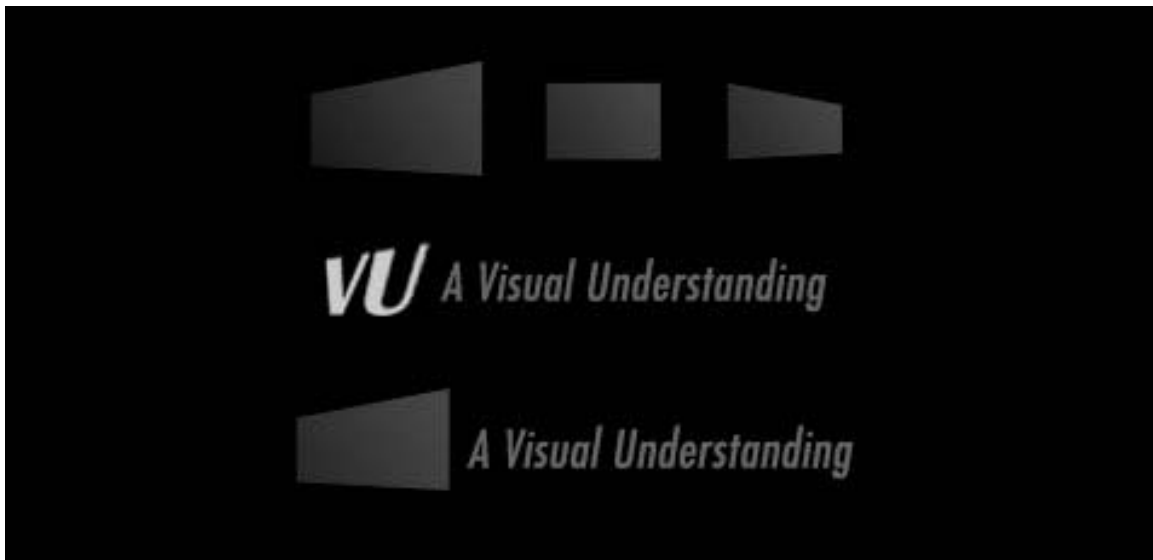
Most importantly, the target user must be motivated to level to learn more about photography. As far as skill level, the user does not have to have an advanced knowledge of photography. Computer/Internet Access is essential, and a user must have a moderate education level and computer experience in order to participate in this learning process. In summary, the target audience will focus on, but is limited to Motivated Web Users, Photography Advocates, Amateur Photographers, Visual Art

Students, and Members of online Photo Communities. Specifically, I am targeting any adult or young adult with computer access and an understanding of photography as well as the technology involved.

Branding

I decided to title this application, A Visual Understanding, seeing as I wanted amateur photographers to realize that they will not only learn how to improve their photographs, but they will also learn to understand why the traditional guidelines featured and the rules of composition will help to improve their photographs. This slide shows the brand elements that I developed for this application.

First, I wanted to create an avatar or character that would move across the screen bringing personality or life to the 4x6 rectangular shape. Next you see the logotype that I established, to the right of the logo, created from the letters VU skewed in perspective to tie into both the title and 3-D elements from this application.



Format

As mentioned, the concept of implementing this application in a banner format is unique to this educational application. In this case, the application was developed as an educational reference and tool and it will be featured as an extension of current online photography sites, or photo community websites. The lessons and techniques covered will be communicated directly to the user in an environment where they currently explore the web.

I believe that through utilizing the advantages of Computer Graphics Design I was able to appeal to a web user's interest and curiosity and give them a hands-on learning experience. Flash applications, which allow users to interact with information, encourage exploration and user control of content. Utilizing motion and Flash interactivity to relay the specifics of this issue as well as offer solutions for those willing to learn, will prove to generate interest and create awareness about this topic.

Information Design

The following graphics depict the proposed layout, functionality, and information design that was included with the documentation for the design of this application. The parameters of this application were set in the thesis proposal and can be defined by visualizing the following information graphics. These graphics will help you visualize the design and interactive parameters for the final application. The sketches include inspirational ideas for many aspects of the project including: presentation, interaction, three-dimensional motion, content organization and file structure.

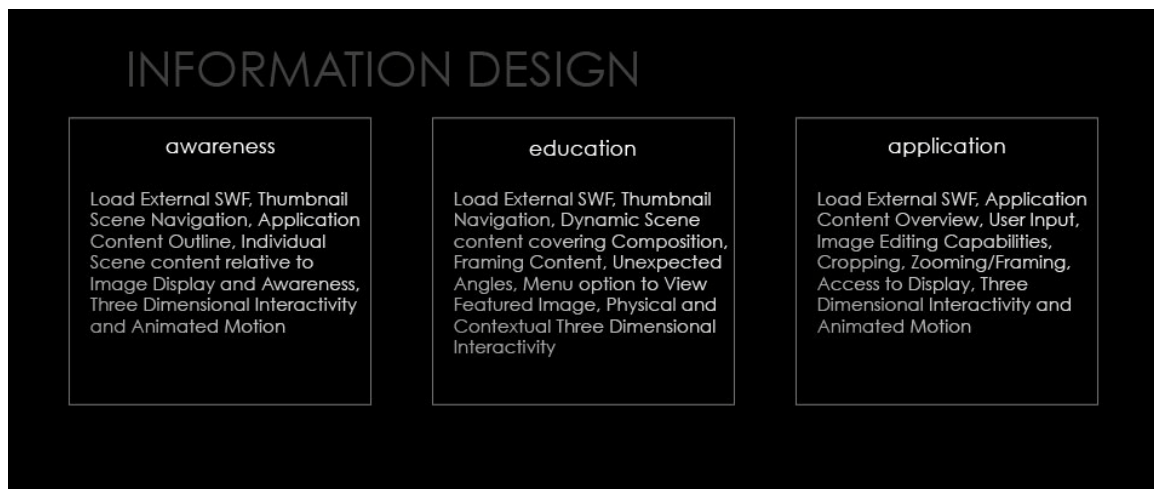


Figure 3.1.1

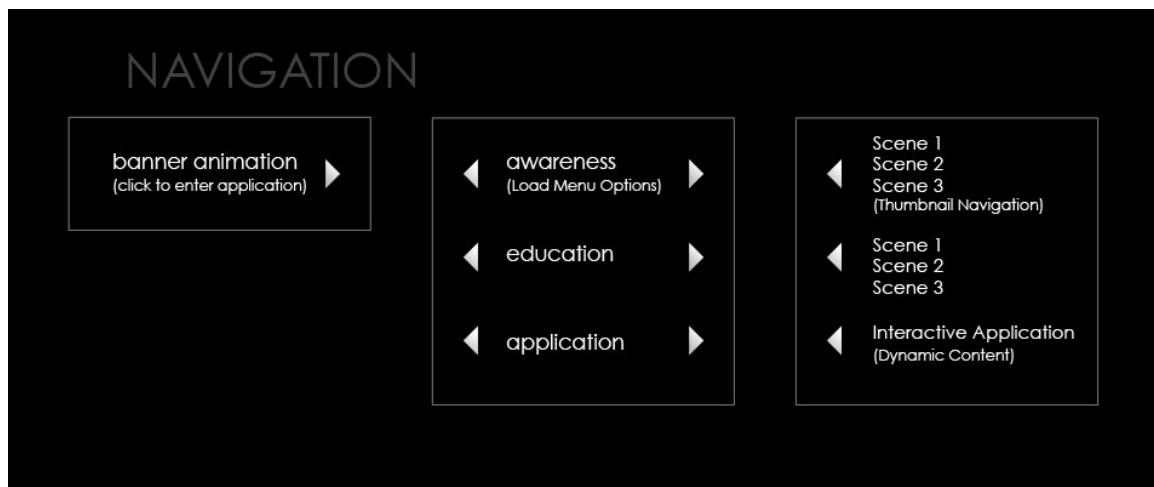


Figure 3.1.2

AWARENESS

Visual Communication and the ways in which photography as an aesthetic, traditional art can relate a specific idea to the viewer by framing and communicating meaning or message.

Photographs should recognize the beauty in simplicity, the traditional composition presentation methods, as well as various aesthetic theories, visually embody simplicity and minimalist theory.

Traditional composition, contrast and perspective techniques reserve the ability to frame any subject within a photograph, and prove to create meaning and encourage visual understanding, critical thinking, and a message by reflection.

Figure 3.1.3

EDUCATION

Composition and the Rule of Thirds

- * Contrast
- * Rhythm
- * Balance
- * Proportion

Framing Content and Context

- * Scale (Proportion)
- * Contrast
- * Unity

Unexpected Angles within the Frame

- * Horizontal
- * Vertical
- * Converging Lines
- * Perspective

Figure 3.1.4

APPLICATION

The application category will provide the user with a hands-on, interactive outlet to reinforce the effectiveness of the compositional rules featured. By incorporating both physical and contextual three dimensional interactivity, users will learn to embrace critical thinking and will see the ways in which compositional techniques effect visual literacy and communication and instill meaning within imagery. The application category features a content overview and physical elements of interactive functionality in relation to each other.

Figure 3.1.5

3.2 Design Considerations

The following graphics are images that depict the proposed layout, design, and information architecture for the Awareness, Education, and Application sections of this project. I have also included a few images of professional design that have inspired the design of this application from an interactive standpoint as well as a graphic standpoint.

Design Concepts

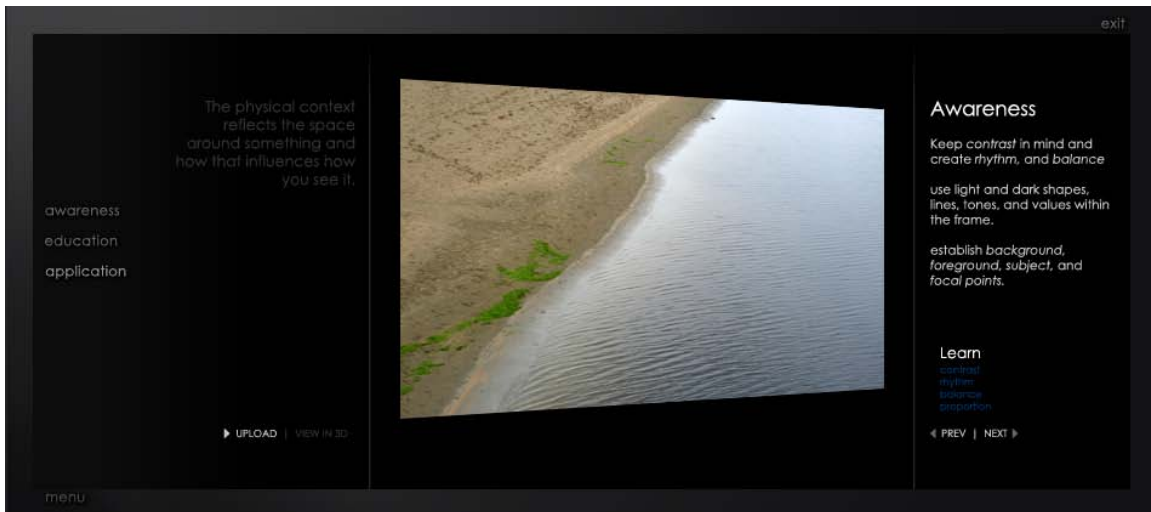


Figure 3.2.1

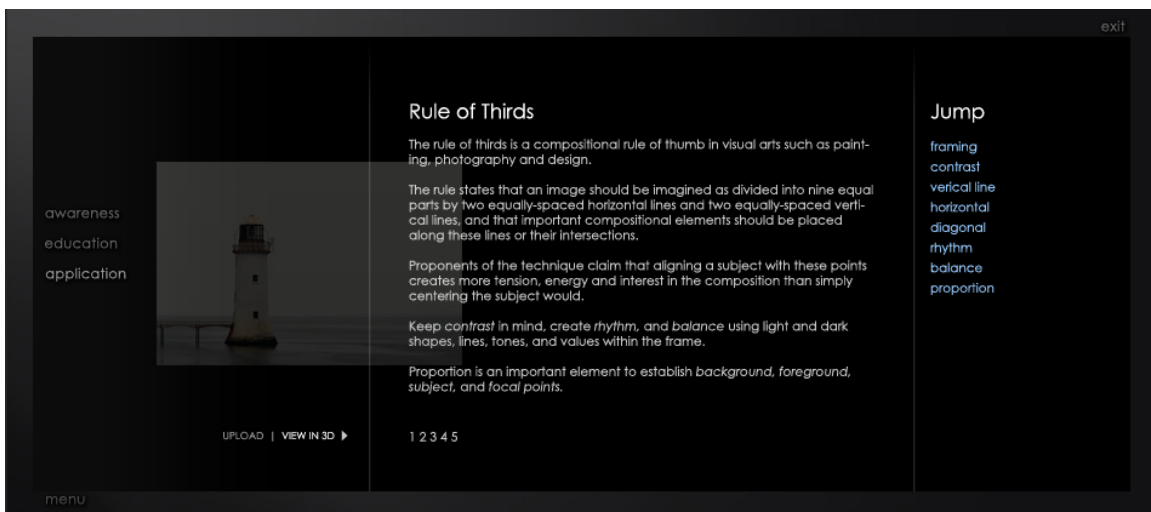


Figure 3.2.2

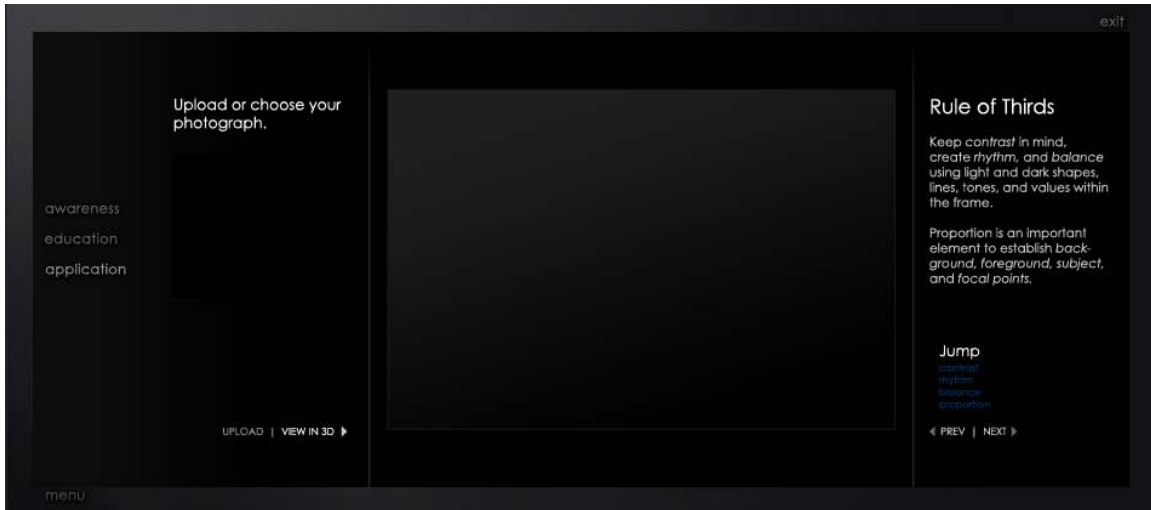


Figure 3.2.3

The graphics featured above and below are representations of designs I completed during the early stages of this project. I'm hoping they will help you visualize what I was imaging for the final application that I have designed and developed. The images are references showing how I originally planned to design, present, and organize content. As I began to develop interaction, include animation, and implement the design some elements changes, however, most of the functionality and design are the same.

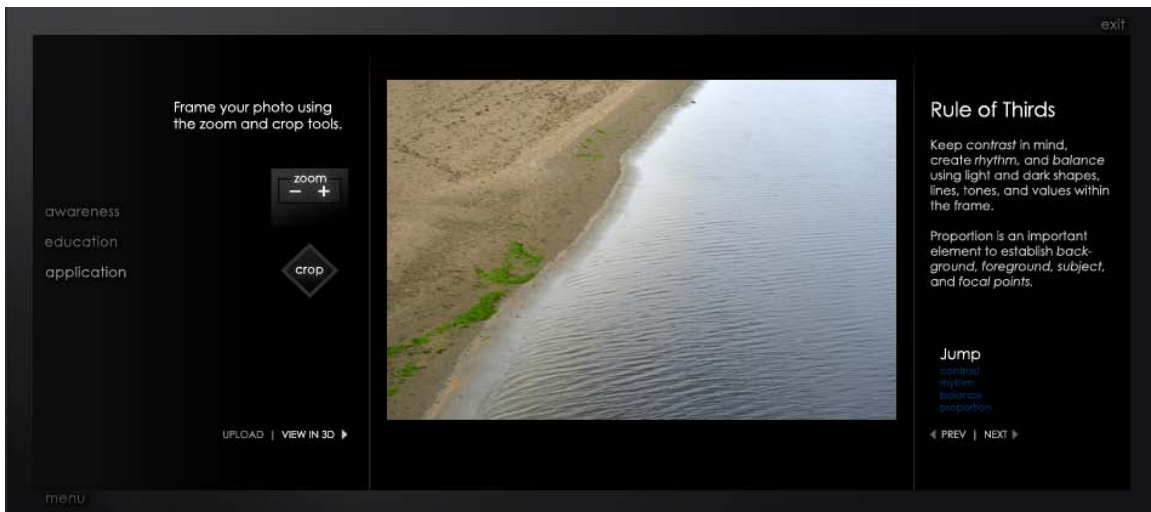


Figure 3.2.4

The application section of this project features very specific functionality elements that relate to the ways in which photographers can arrange and compose their images. The zoom function is representational of the zoom capabilities of a camera, as the crop function allows users to practice implementing the framing and cropping techniques they learned in the educational section. After adjusting the image uploaded the user can then view their image in a contextual, 3-D environment.

3.3 Technical Issues

Some design/technical problems that I encountered while developing this application were issues with the original font size and styles I chose to focus on. The images featured here are representations of the final layout, design, and type choices that I decided to implement for the final project. When viewed in comparison to the images representing the proposed design you will be able to see the changes that I made to the font structure. I found that it was necessary to increase font sizes in order to make the application easier to read, and including large images to generate interest and provide visual examples to amateur photographers.

The graphics featured in the next few slides are representations of the layout and design that I decided on for this project. I'm hoping these images will help you visualize what I have developed for the final application. These images are references showing how I planned to design, present, and organize content. As stated, when I began to develop interaction, include animation, and implement the design some elements that I planned to include needed to change, however, most of the functionality and design elements are consistent in both look and layout as they were represented in the proposed design.

In these images you can see the typography, color scheme, and design elements that I have used in the development of this application. You can see representations of the type hierarchy that I established, and the black and grey color scheme that I chose. I appreciate the way that a monochromatic interface will allow the content and photography to be the main focus of the application.

Final Design

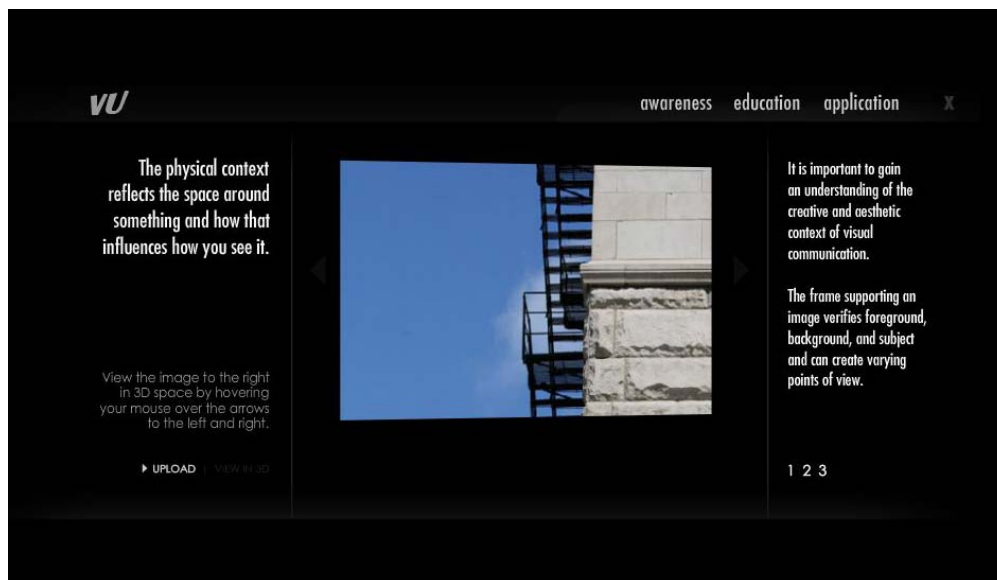


Figure 3.3.1



Figure 3.3.2

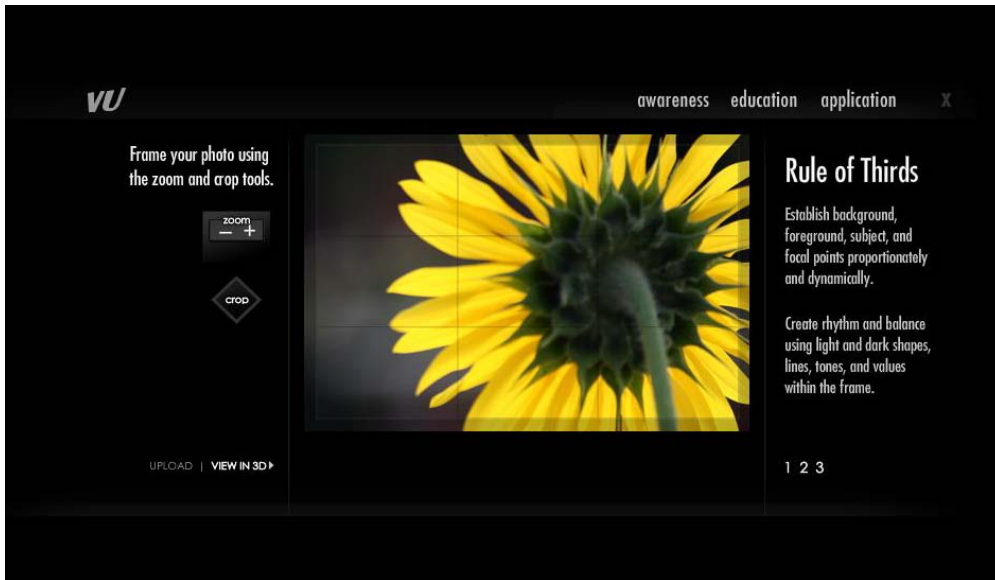


Figure 3.3.3

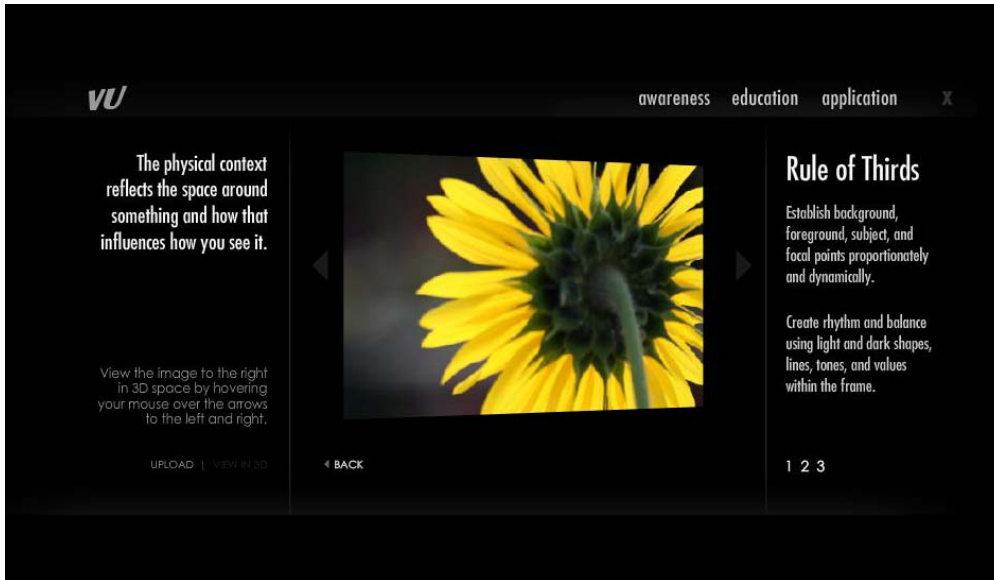


Figure 3.3.4

3.4 Troubleshooting (Technical Conclusion)

Technology, in this case is what allowed this application to succeed in many ways. The construction of this application within Flash and the implementation of this application's display in association with a partner webpage, designed merging Dreamweaver, html and JavaScript platforms were both new to me. I now can say that I have experience in linking and embedding swf files in a dynamic way; as well as experience designing for a site incorporating both functionalities.

By utilizing motion tweens and preprogrammed ActionScript and Greensock animation technology in order to add dynamic motion features to the application, I learned to create a dynamic banner ad as well as a customizable educational application. The technology that allows flash applications to dynamically add movie clips that will house swf objects, images, and text using ActionScript 3 also allowed this application to become more of a hands-on learning resource.

Learning the ways in which this application could house dynamic content using xml for content management allowing continual updates to content and imagery was another challenge of the development of this project. Allowing for image uploading abilities as well as image control and editing features utilizing frame, zooming, composition proved to be new technology and a challenge to implement. Utilizing the Flash 3D platform was the experimental portion of this project. I learned a lot about the new Flash CS4 3-D capabilities and ways to implement 3-D in order to add context to the images displayed and allow users to dynamically view their own photographs online.

4 Methodology

4.1 *Usability Testing*

Usability Testing

I decided to perform the usability testing for this application on an audience of RIT students. I wanted to utilize the clipboard survey program in order to complete my usability testing, and in this case it was worthwhile use this program and survey RIT students who have access to this program. Once I realized my goals for the usability testing, I decided that it would be appropriate to approach the Photography Department so that I could focus my testing on my target audience. I tested the application by having the students in both of the Introduction to Photography classes that were in offered the Spring Quarter explore the application and complete an online survey.

I planned to test the design, and usability, and functionality of this site progressively as I complete stages during the process of designing and building the application. I did this by completing the testing for this application in two stages. There were two Introduction to Photography classes offered, so after completing the usability testing in the first class I was able to make changes and updates to the prototype before testing for the second time. In this case, I prepared to accommodate for a target audience with varied in computer knowledge and experience. It was helpful for me to perform the usability testing in a similar environment. In this case, the more experienced users in the Introduction to Photography classes were able to offer suggestions and insights from a design and technology point of view that I may not realize during this process. The inexperienced users were also vital to making sure the navigation process that this application utilizes is seamless and intuitive.

In order to test this product, I posted both the Thesis Proposal and Documentation online. I provided the link to the Thesis Application by handing out an instructional card to each student. I needed to work out an intuitive way to represent this applications intended display method, because essentially, this application would be utilized in association with another site. In order to accommodate this challenge specific examples of the purpose of the site were explained. I included photo community sites, both a university and college's visual art department site, and an instructional photography site, as online photography resources, for the users to get an idea of what the final destination for application would be. In order to present this application the banner linking to the final thesis application was displayed within the thesis presentation site.

In this case, the instructions provided to each student read as follows: Please explore the application and then respond to the following statements as to whether you agree, strongly agree, disagree, strongly disagree, or remain neutral.

Methodology

The survey of usability that I wrote focused on targeting the effectiveness of the banner ad, content organization, and navigational elements of my project. The survey was composed of 15 questions, and I collected demographic information about each participant as well as comments and suggestions from the participants. The questions asked were formatted as statements, and the participants were then allowed to answer as to whether they agreed, strongly agree, disagreed, strongly disagreed, or remained neutral after reading each statement. Examples of some of the statements that were included are; the goal of this website is clear; the links on the homepage are clear; I was able to find the appropriate link for the information I wanted on the site's homepage.

4.2 Testing Results

Targeted Audience Demographics

Photography Experience

5 - Amateur

4 - Intermediate

0 - Expert

Other Responses (3)

- New Media Design student
- beginner
- Hobbyist (Beginner)

Year in School

3 - Freshman

2 - Sophomore

5 - Junior

1 - Senior

Other Responses (1)

- 5th year transfer student




Gender

5 - Male

7 - Female

Application Usability Results

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	did not answer
The goal of this website is clear.	3	7	1	1	1	0
In general, the links on the home page are clear.	2	8	1	1	1	0
I was able to find the appropriate link for information I wanted on the site's home page.	0	6	6	6	0	0
The titles on each page are understandable.	4	7	1	1	0	0
Overall, it is easy to distinguish between the primary content and secondary content.	2	6	4	4	0	0
The links take me where I expect to go.	2	7	3	3	0	0
This website is easy to navigate.	1	6	4	4	1	0
This website has a pleasing design.	3	5	4	4	0	0
The organization of information on this site is clear.	4	4	4	4	0	0
The educational content is clearly labeled.	4	7	1	1	0	0
The function of each menu item is easily understood.	2	7	3	3	0	0
The secondary navigation is well organized.	1	4	7	7	0	0

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	did not answer
 The secondary navigation is easy to find.	0	3	7	7	1	1
 All of the functions I expected to find are present.	1	7	3	3	1	0
 All of the educational content I expected to find are present.	2	6	4	4	0	0

4.3 Audience Feedback

As far as user feedback I received both of positive and negative responses. Some technical problems that I encountered while developing this application were issues with the original font size and styles I chose to focus on. The usability testing also proved to support the idea that I needed to make changes to the way in which the text and content was being displayed. Some of the changes that I made to the font structure are easy to identify; I found that it was necessary to increase font sizes in order to make the application easier to read, and I also made sure to include large images to generate interest and provide visual examples to amateur photographers.

In this case, the user feedback showed me that the navigation I was using was functional, however, it was mentioned more than once that I should create a static navigation “bar” that would always be displayed at the top of the page, rather than a menu system that the user needed to click on the logo to display. Overall, I received positive feedback as far as the content and graphics featured in this project, and I also received positive feedback as far as the interactivity and hands-on learning that the application section focuses on.

After testing this project I was happy to see that, what was most important to me, the content, did receive positive feedback. Not only was I encouraged to add more content because the users were motivated to learn more, but the application also generated a lot of interest among users from an awareness standpoint. The goal was to encourage, motivate, and inspire amateur photographers and I feel that while there was critique of the application, size, and speed this did not hinder audiences from continuing to explore educational content seeing as they were motivated to learn more.

Examples of User Comments

- This is really nice and awesome website that you design. However, when I click the link to your website, I don't know what is going on and where to click. It was nice introduction that u made but it would be nice if you skip button because I know a lot of reader usually click skip introduction. I didn't expect to see there is navigation at bottom of website, but it was nice design you made for navigation. Overall, it was awesome and amazing website I would give A plus for it. Just fix little bit more visual where reader are able to click and know where to go.
- The bolded font used to link to a picture was hard to read. Maybe kern the letters a little more if they are going to be so bold. Sometimes the letters on the smaller font dissolve into the background.
- Great design. Although under the Visual Understanding... I was a little confused on what to do; I did not know that I had to move my cursor over the words in order to make a photo appear.
- I may not know a lot about photography, but I do know about websites and this one is hard for me to follow. This website has potential and it will work one day, but for now I feel that when I go to learn about one thing another part of the same subject matter comes up and I get confused. I think the awareness is good and you know the target audience, but I feel like when I went to the education and application part I felt lost and more confused. I hope you have a way to fix some glitches because as an amateur photographer I would like to get some help and I think this website might actually help me.
- The website design was very nice. It was pleasing to the eyes. I really enjoyed the white on black composition layout. However, the website utilizes too much flash. There were instances where I wanted to access very basic information and the webpage would take a while to load. When the page loaded, there was too much blank space in the middle and I was unsure as to where to navigate to begin. It was ambiguous in a sense. I feel that the main goal behind this website should be outlined before starting off with fancy graphics.

5 Conclusion

What I've Learned

Upon completing this project I can say that I've learned a lot about the importance of process. Following the order and schedule of importance when it comes to planning, researching, designing, executing, implementing, and testing an interactive educational campaign is an essential element to success! I've learned that planning is the key to completing a project, and testing can be the most important elements when creating a successful application. Knowing your target audience, the medium of implementation, presentation, and method of testing should and will affect the process of development during each stage of progress.

As far as presentation of content and design, I have learned the effectiveness and importance of utilizing visual means of communication. As I conducted research focusing on visual communication in order to learn the lessons of composition that I planned to teach the target audience within this application, I also taught myself the importance of including visual elements, or examples within the display and execution of the educational content within the application that I was designing.

Project Challenges

One of the most important challenges of this process was proving and implementing my "goal" or experimental hypothesis. The connection between the 3-D visual examples featured in the application as compared to actual, physical images printed in the form of photographs, in frames, on walls, or as snapshots held in a photographers hand is not possible to prove at this point. However, the feedback I've received does prove that by displaying visual examples in a dynamic, elastic, or motion-oriented context I have generated more interest, engagement, and attention from audience members.

Whether it may be the nature of interactive or rich media environments, or simply the novelty of this technique, displaying images in a contextual environment, with physical qualities is reminiscent to some of actual prints, or professional images featured in an isolated gallery setting did prove to generate interest and awareness. The goal to bring importance, awareness, and appreciation back to photography, to associate images with the traditional, visual art theory and visual communication as a means of creating meaning and message in photographs, has been achieved in various dimensions.

The contextual, isolated presentation, monochromatic color scheme, and minimal layout of this application focuses on allowing the user to experience images featured as primary content and become inspired by this presentation. To motivate and inspire amateur photographers to want to create more interest with their photographs, generate meaning, message, and audience response, the ultimate goal of this application, can be

said to be relevant and approached in an appropriate way. By setting the example and displaying visuals that are meaningful, impactful, and follow the traditional rules of composition I have faced this challenge and do inspire amateur photographers to embody the same principals of selection when choosing to post their own images online in blogs and photo communities.

Design Issues

Specific design issues that I expect to run into while developing this application would include size limitations. Since this application needs to be designed as a website component, both file size and physical, on screen application size will be limited.

Extended load time would create disinterest among users, and since the majority of users would only be 'clicking through' this application on their way to another site, in contrast to seeking out this resource for a specific purpose, it would be in my best interest to keep this component light in file size and quick to load.

To compensate for the lack of space, I plan to create a visually interesting application through the use of motion and three dimensional presentation techniques. I plan to make this application interactive in order to encourage a hands-on learning approach, as well as to make the message mean something though the immediate application and relation to the user's personal experiences with photography.

Future Interactivity

Future developments that I hope to incorporate into this application would be a flash video demonstrating functionality of this application and the interface; or I would possibly include an interactive map of the interface showing how it is used.

Also, in the future I would like to include more examples demonstrating the traditional rules of photography, so that a different 'set' of examples will appear each time the user opens this application, essentially learning new information and being able to continue to use this application as an educational tool as it is updated.

Finally, if I learned the how to utilize appropriate technology I would try to incorporate metadata into the application section of this project, allowing the flash program to read and identify user uploaded images and suggest composition rules that apply

Computer Graphics Design

I feel that it is more important now than ever to address the problem outlined by this thesis experiment and do so by utilizing the same means of communication that amateur photographers are embracing. After researching this issue I decided that I feel strongly that this thesis piece does utilize the Internet as a means of display and

reproduction. This is because the target audience of web users who are displaying photos online will essentially be targeted and reached through the same means of communication that they are utilizing to communicate online with each other.

With further research, I have reinforced my belief that through developing an online application that will educate amateur photographers on design theory and the rules of composition, I will be able to create awareness about the importance of traditional visual art practices. I believe that the demonstration and application of these guidelines allows amateur photographers to begin see where their skills must improve, and they are then inspired to improve their photographs as well. This application does create awareness about photography's significance as a traditional visual art as well as a means of visual communication.

By relating visual art theories to subjects such as photojournalism, documentary photography, and fine art photography users will be equipped with the knowledge to live up to their potential as photographers. After further research, I can conclude that through the development of traditional composition skills and an educational understanding of visual communication and visual literacy amateur photographers will be motivated to see photographs as an art, in context with meaning, message, and effectiveness.

Final Presentation

In conclusion, by completing research and testing this project I was happy to see that, what was most important to me, the content, did receive positive feedback. Not only was I encouraged to add more content because the users were motivated to learn more, but the application also generated a lot of interest among users from an awareness standpoint.

The goal was to encourage, motivate, and inspire amateur photographers. The minimal design and monochromatic interface does allow the content and photography to be the main focus of the application. The feedback I've received does prove that by displaying visual examples in a dynamic, elastic, or motion-oriented content I have generated more interest, engagement, and attention from amateur photographers.

I plan to present this application at the thesis show similar to the way in which I tested the application. I will embed the application in an isolated window so that the audience will be able to explore and test the interactivity. I will have images available for audience members to upload into the hands on section of this application. I will also have a link available for audience members to reference my thesis proposal and learn more about the development process for my project.

6 Appendix

6.2 *Thesis Proposal for the Master of Fine Arts Degree*

Thesis Proposal for the Master of Fine Arts Degree

Rochester Institute of Technology
College of Imaging Arts and Sciences
School of Design
Computer Graphics Design

A Visual Understanding: A contextual experiment portraying the relationship between traditional composition techniques and visual communication online.

Submitted by Joanna Ward
November 12, 2009

Abstract

This proposal focuses on the issue of significance when viewing photography online and the ways in which Computer Graphics Design can solve this problem. Since the advent of the Internet and digital photography, amateur photographers are dominating the representation of photography online. To some, this seems to suggest that photography is not being clearly portrayed as a traditional visual art. This proposal plans to address the problems with the way in which photography is being portrayed by first, creating awareness about this concern and second, educating the online user in attempt to solve this problem.

This proposal describes the plan to gather information supporting the stated thesis, display this information in an online application, and develop a way to engage web users while making them aware of this issue. This proposal calls to educate users on traditional composition theories that have proven to be successful means of communication. Through the demonstration of the effectiveness of these theories as well as the importance of visual communication, amateur photographers will learn how to create visual meaning in photographs, and why they should be aiming to communicate messages through photography as a traditional art.

It has been recognized that it will be important to visually demonstrate the practical application of these techniques. Through the study of visual communication, online media and flash interactivity, the goal is to create and develop a resource that will provide amateur photographers with an understanding of visual communication and the ways in which the relationship between composition techniques and design theory can significantly impact photography. By providing an educational understanding of photographic design theories, discussing lines, shapes, angles, and frames in an interactive atmosphere, web users will learn photography techniques in a hands-on manner instead of simply reading about rules or techniques.

This proposal goes on to explore different means of information design and contextual, three-dimensional interactive applications, and researches the ways in which the use of computer graphics design to create a hands-on learning experience will increase awareness and educate amateur photographers. Research is also conducted to provide examples that portray the rules of composition and the visual potential of photography as a means of communication.

In summary, this proposal outlines that through the study and comparison to subjects within fine art and traditional photography, users will be both inspired and directly affected by visual representations. The author's intention is to visually, interactively, and contextually represent the potential for photographs to provide entertainment, embody visual art and culture, and provide compositional representation of meaning and message to their audiences.

Problem Statement

From my point of view as an amateur photographer with an educational background in photography as a visual art, I see a twenty-first century issue that needs to be addressed when it comes to communicating with, sharing, displaying and viewing photography online. Since the advent of the Internet and digital technologies, the representation of photography online suggests that there are more amateur photographers posting their work than professionals. Because of the growth of photography as a hobby, as well as the increase in the representation of photography online, the definition of photography as a traditional visual art is changing. I believe that through awareness and education, an interactive application will help to change this pattern.

As stated, because of the increase in popularity of communicating online, many web users have taken to posting their photographs in web communities and blogs for the world to see. The problem has arisen that since any user can post photos in these public web environments photographs are being displayed and evaluated without traditional, professional or educational context. Posting photos online seems to be a trend that is both popular and permanent. Seeing as the Internet is now being accepted as an appropriate visual medium for displaying photographs now is the time that awareness, understanding and instruction need to be available to amateur photographers.

I see addressing this issue as challenging, because of the magnitude of the problem. There is an enormous lack of understanding when it comes to viewing photographs that are encountered on the Internet. In some web communities, photography is no longer being viewed as traditional visual art. This is because we are not only inundated with photographs online, but we are becoming overwhelmed and disinterested. There is not only a lack of understanding from a visual literacy perspective, but a contextual, educational standpoint, as well.

I believe that awareness should be raised specifically among amateur photographers involved in displaying photographs online within web communities such as Flickr and Photobucket. The focus of this thesis will be to convey the importance of the traditional rules of composition as related to photography as a visual art by developing an online application targeting amateur photographers. In order to portray contextual ways to evaluate online information, aspects of visual literacy and visual communication will be addressed. Through the development of an interactive application I plan to educate and motivate photographers to embrace traditional composition guidelines in order to effectively communicate visual messages.

Project Description

This project can be described in as an exploration of compositional effects on communication and meaning when representing photographs online. I've identified a problem that I believe needs attention, and I feel that bringing an element of visual context to the display of photography online will create awareness and educate amateur photographers. This application will help amateur photographers create meaning and effectively communicate messages, making the most of the art of photography.

The Internet provides information on many levels and in large portions; I plan to address the challenges the Internet presents by organizing information and utilizing elements of interactivity and hands-on online learning. I plan to face the challenges of the Internet by taking into consideration elements of information overload, and designing an application that will distance viewers from generic content and encourage a hands-on and custom learning experience. I need to make sure to maintain an objective point of view while still striving to generate interest, awareness and excitement to learn and share information. To me, it seems that by isolating images visually and providing a relevant context, amateur photographers will begin to see and acknowledge an image's potential to communicate as an art through unity in feeling and message compositionally.

Educational Content

By focusing my research on composition and traditional techniques that have proved effective, I will demonstrate to amateur photographers the ways in which they can change the way their photographs are viewed and interpreted. Specifically, the proposed application will first educate users on "Composition and the Rule of Thirds," addressing elements of Contrast, Rhythm, Balance, and Proportion. Secondly, the educational content will focus on "Framing Content and Context," referring to Scale (Proportion), Contrast and Unity from an objective standpoint. Finally, the importance of "Angles and Lines" within the frame will be addressed. From a visual communication perspective, the application will outline the ways in which Horizontal, Vertical, and Converging Lines address meaning and specify message within the frame.

By embodying these techniques and embodying the principals of traditional visual art when shooting, editing and choosing photographs to display online, the target audience of amateur photographers will learn to effectively communicate messages and emotions visually. This application will specifically focus on composition, communication, awareness, and application. I also plan to research the relationship between visual art theories and effective communication and then create a hands-on experience featuring information design, user controlled interaction and experimentation with dynamic

content that will communicate and enforce the importance of design theories and composition.

Application Format

In this case, the proposed application will be developed as an educational reference and tool. The lessons and techniques covered will be communicated directly to the user. This would be classified as one way communication. While the application will allow for specific user interaction, the user will not be inputting information that will be collected or shared with other users. Instead, this application is utilizing computer graphics technologies and human-computer interaction to engage users and communicate a specific message.

I believe that through utilizing the advantages of Computer Graphics Design and New Media interactive technology I will gain the ability to appeal to a web user's interest and curiosity and give them a hands-on learning experience. Flash applications, which allow users to interact with information, allow for exploration and user control of content. Utilizing motion and Flash interactivity to relay the specifics of this issue as well as offer solutions for those willing to learn, will prove to generate interest and awareness to the issues of photography being displayed online.

The format or display of this application will be similar to that of a web banner. The idea to incorporate this educational tool as an element of an external host website will allow the application to target a larger audience, and reach amateur photographers where they currently frequent web pages. Also, this means of display will allow amateur photographers to embrace this resource as a learning tool while they are, choosing, uploading, and posting photographs online.

Design

As far as the design component of this application, I think it will be important to keep the interface minimal, comprehensive, and uncluttered. I am planning on incorporating a monochromatic color scheme. Because this application will be specifically portraying photographs and techniques relating to photography and visual communication, I feel that in order to make the photographs stand out it will be advantageous to display the images within a black and gray environment.

The colors and graphic elements within this interface will be kept to a minimum, allowing content, photographs and animation elements to stand out. The three-dimensional layout, motion, and interactive animation seek to portray contextual importance to the user. The idea of visual literacy and the ability for this application to provide an environment that encourages critical thinking, evolution of meaning and

message, and visual communication will benefit from a design that proves to be distraction-free. Specific illustrations of concept and examples of visual design inspiration are featured in the Design Concepts section found later in this proposal.

Information Design

The information design for this application will focus on the outlined three major categories, Awareness, Education, and Application. I plan to create an environment that will live as a banner on the host website that will include the navigational menu and load external scenes that correspond with each category. Within each category there will be different elements of content featured, and the user will be able to scroll through each element utilizing thumbnail navigation. The Awareness category will incorporate content outlines, scene content relative to the image displayed, and three dimensional interactivity and animated motion. Similarly, the Education category will incorporate thumbnail navigation and dynamic scene content. In this case the content will be the focus, and this is where the application will cover the traditional visual art techniques including Composition, Framing Content, and Unexpected Angles. Finally, the application category will provide the user with a space to explore and test the techniques they learned. By incorporating physical and contextual, three dimensional interactivity, users will learn to embrace critical thinking and will see the ways in which compositional techniques effect visual literacy and communication and instill meaning within imagery. The application category features a content overview and physical elements of interactive functionality in relation to each other. Functionality includes custom user input, image upload and editing capabilities, cropping, zooming/framing, access to display, three dimensional interactivity and animated motions.

Navigation

The navigational aspect of this application will also be outlined as an illustration feature in the Design Concepts section found later in this proposal. It is important to realize the simplicity of the navigation for this application. Seemingly, the three menu categories will dictate the user's location within the application. It is important to design the navigation to be straightforward and easy to use so that the user will not be overwhelmed by the application and will be able to focus on content. The interactivity will be incorporated in the way the user can select their location within the application, navigate through the thumbnails outlining content, and control the motion and animation of the imagery featured. Hands-on learning will also be embraced through the ways in which the user can interact and edit their custom images.

While others have only listed advantages, this application will show the ways in which composition can affect meaning and message. Displaying educational information in an interesting, appropriate, and relevant way, computer graphics technology will be

utilized to create a hands-on, or interactive and contextual experience, in essence, proving to educate from a motivational perspective.

By educating amateur photographers I hope to give photography a traditional context online, and provide a visual understanding of literacy and cognitive communication as it relates to photography. I realize that I must first create awareness about the relationship between photography and communication. Using the most recent advancements of computer graphics design and programming to create a visual experience, I plan to educate as well as inspire. The goals and objectives of this application will be to utilize dynamic motion and a hands-on approach to interactive learning, as well as create custom user experience to keep people interested and literally “show” the effects of the composition and traditional theories.

Target Audience

In order to effectively describe the target audience for this thesis application, I'll start large, and then talk specifics of the desired audience. First, it is important to point out that while this application will be most available online in association with a variety of host websites, this application may *not* be limited to utilizing the internet as the only mode of distribution. So because of this I will not limit my target audience to web users only, even though they will be the majority of people utilizing this application.

I plan to develop an application that will be featured on the web as more than a static site, locked to one location or url. So, in this case, the target audience will not be limited to one domain name in the ways that traditional web sites have been limited in the past. Both male and female web users would be targeted in this case, and both young adults and adults will both learn and benefit from the content offered. Computer experience will be important, but not necessarily mandatory; the same goes for education, reading level, and subject matter experience. I plan to incorporate both visual and textual interaction, while these elements will be integrated with each other they could stand alone and provide visual interest, too.

Motivational level will be one of the most important characteristics of the target user. The user's interest in the subject matter will dictate the investment they have in learning about photography and therefore the relevance of this application to them. I want to focus on narrowing the target audience by interests. Ideally, anyone who is an advocate of photography will be interested in using this online application. More specifically, I would like to focus on targeting amateur photographers. Examples of this audience would include, students who have yet to learn the traditions of photography as a visual art, online users that are members of one or many of the various online photography communities, anyone interested in displaying their photography either online or professionally, as well as photography advocates who want to get involved in

pursuing photography and learning how to take advantage of this visual medium as a traditional and artistic means of communication.

In summary

- Focusing on, but not limited to Motivated Web Users
- Photography Advocates, Amateur Photographers, Visual Art Students
- The many members of online photo communities
- Photography fans, Anyone who wishes to pursue photography further

Methods and Process of Developing the Project

I want to make sure to fully address the research challenge of pursuing this topic while at the same time creating an application that is both educational and practical. I plan to develop this application through research, design, and development. I plan to research relevant subject matter, address the issue I've described in my problem statement and find images and sources that will support the interest of raising awareness of photography as an art. This information needs to be interesting, relevant, concise, and it must explain traditional methods of composition and their effects on visual communication.

I plan to consolidate a relevant and inspiring message as well as an easy to navigate educational application. The design for this application will be built in Adobe Photoshop, the prototype will be implemented in Adobe Flash, and finally presented online utilizing the web page development program Adobe Dreamweaver.

I plan to build an interface that is implemented as a component to a host website. The first design that will be built in Photoshop will incorporate ideas for layout, the opening animation, and navigation. I would need to design the interface for the application once it has been opened as well. Both of these elements will be implemented in flash platforms and tied together utilizing an html platform. I plan to test the design of this application before beginning implementation, because feedback will be important to prove or disprove the functionality of the front end of this product as well as the navigation established.

I plan to develop for the future, so while this will not be easily accessible now, this application would not be released until completion, scheduled for the spring of 2010. In an effort to plan ahead it seems to make sense to not limit the scope of the product in order to be compliant with current technology.

The software and hardware elements that will be required to develop this application include, as mentioned, the Adobe Suite software products, as well as access to the internet and resources for learning the necessary development skills.

Incorporating elements of 3D interaction and motion graphics using the Flash platform is still experimental; this would be one of the main technical ways in which this thesis application will break new ground. Flash CS4 is required to experiment in 3D, as well as Flash Player 10 to view the 3D application.

The target computer would be open-ended, as long as the computer and the operating system met the following system requirements. The essentials that will be necessary for this application to be used include Flash Player 10 and a current browser that supports Flash Player 10 as well as an Internet connection, preferably a high-speed Internet connection.

Necessary Development Skills

- Construction of an application within Flash and implementation of this application's display in association with a partner webpage, designed merging Dreamweaver, html and JavaScript platforms (ie. Linking, embedding the swf file, designing for a site incorporating both functionalities)
- Utilizing tweening, or preprogrammed ActionScript animations in order to add dynamic motion features to the application
- Dynamically adding movie clips that will house swf objects, images, and text using ActionScript 3as well as Learning ways in which this application could house dynamic content using xml for content management allowing continual updates to content and imagery
- Image Control and editing features utilizing frame, zooming, composition-moving image within mask)
- Flash 3D platform experimentation, and creation of ways to use 3D to add context to dynamically viewing photographs online

Testing, Presentation, and Design Issues

I plan to test the design, and usability, and functionality of this site progressively as I complete stages during the process of designing and building the application. I plan to complete this testing utilizing the people around me; classmates, co-workers, as well as friends and family with experience in computer design as well as inexperience. The more experienced users will be able to offer suggestions and insights that I may not realize during this process. The inexperienced users will be vital to making sure the navigation process that this application utilizes is seamless and intuitive.

In order to test this product, I would post both the Thesis Proposal and Documentation online, and then link from this presentation site to the Thesis Application. I would need to work out an intuitive way to represent this applications intended display method. This application would be utilized in association with another site. Specifically examples include a photo community site, a university or college's visual art department site, an instructional photography site, as well as other various online photography resources. In order to present this application, I would need to show a hypothetical situation. A banner linking to the final thesis application would be displayed within the thesis presentation site. However, to represent the intended means of display, the application will only be associated with an image of a photo community site.

Specific design issues that I expect to run into while developing this application would include size limitations. Since this application needs to be designed as a website component, both file size and physical, on screen application size will be limited.

Extended load time would create disinterest among users, and since the majority of users would only be 'clicking through' this application on their way to another site, in contrast to seeking out this resource for a specific purpose, it would be in my best interest to keep this component light in file size and quick to load.

To compensate for the lack of space, I plan to create a visually interesting application through the use of motion and three dimensional presentation techniques. I plan to make this application interactive in order to encourage a hands-on learning approach, as well as to make the message mean something though the immediate application and relation to the user's personal experiences with photography.

In Summary

- Lack of screen space due to the nature of this application
- File size limitations, because of the imaging and three-dimensional requirements
- Technical setbacks, because of my limited experience with object oriented programming

Supporting Documents

I have decided to include my previous work as well as other web resources that are relevant to my problem statement as supporting documents. First, I would include my Production Pipeline Project, followed by other various 3D Flash experiments, XML Gallery Projects as well as Programming Example projects.

I also plan to research and gather information from trial sites as supporting information for the reasons this application would be useful. Examples may include web pages from

photography community sites such as Flickr, Photobucket, Red Bubble, Square Space, Wordpress, Dripbook.

I think it is important for me to define photography as a significant means of visual communication, and I plan to use specific texts and journal articles to support this thesis. It will be important for me to collect information for my survey of literature, as well as an annotated bibliography from textual sources that will be used as justification for this thesis, and content within the educational application itself.

Implications of Research

Like I've previously stated, I see a twenty-first century issue that needs to be addressed when it comes to viewing photography online. Many people are communicating with, sharing, displaying and viewing photography online, and there are both advantages and disadvantages when considering online communication and various other twentieth century technologies. Our generation is not the first to have to acknowledge the consequences of technology and we need to learn from the past, make changes as technologies advance, and accept both benefits and limitations.

In this case, I am focusing my thesis on the question of online photographic representation and whether photography is being accurately and/or appropriately defined as a traditional art and means of visual communication. First, I want to take the time to share insights from a historical perspective, addressing photography as an art, and the development of photographic technology.

Historical Perspective

Walter Benjamin, author, *Art in the Age of Mechanical Reproduction*, first asserted a theory that claims that the rise of easily reproducible artwork leads to that artwork losing its traditional ritual meaning. Photography as an art needed to prove itself as more than a mechanical means of reproduction, and visual art theories as well as compositional principals were introduced to help do this.

Walter Benjamin argued that Art loses its meaning as ritual through the loss it aura, or authenticity. What Benjamin means by aura is the work of art's aesthetic value gained through its uniqueness. At first, photography, being compared to the traditional visual arts such as painting and sculpture, was looked on as less of a traditional art. Around 1900 photography, as a technical means of reproduction, allowed for the replication/reproduction of traditional artwork, and also captured a place of its own among the artistic processes.

At this time, reproduction was slated to have diminished the unique and authentic value of works of art, because of the way in which the reproduction would distance the viewer

from the original artwork and the physical impact, as well as the intended meaning or message. To quote the 1990 theory, "Works of art are received and valued on different planes. Two polar types stand out; with one, the accent is on the cult value; with the other, on the exhibition value of the work."

Relating to the twentieth century point of view, there are many web users who have taken up photography as a hobby, and the trend is to display or post photos online to share with friends, family, and others. Because of the growth of photography as a hobby, as well as the increase in the representation of photography online, the definition of photography as a traditional visual art is not being understood or fully acknowledged.

Currently, there are online websites and resources that present and list the rules of composition as they relate to photography. These sites also target amateur photographers and present similar information that the proposed thesis application will cover; however, many of the current resources do not embrace interactive technology as a means of learning and communication. Also, the current methods of photography education are not embracing compositional rules from an awareness standpoint. The current resources are pointing out the traditional rules without demonstrating the importance and effect. Throughout my research I typically found sites that use static images as examples of the information presented, but these images would not be dynamic or interactive. Also, I have yet to find an online resource that allows users to upload and practice the rules of composition in order to realize the effects and benefits.

Project Goals

The Internet is inundated with images, and I believe that this needs to be addressed. Many amateur or beginner photographers need to gain an understanding of photography as traditional visual art in order to convey the importance of creative selection and discretion when processing images and posting them online. I believe that by providing an outlet for amateur photographers to gain an educational understanding of composition techniques, and realize the ability for photographs to be successful as both traditional artworks and means of visual communication.

After beginning to research this problem, challenges arose when I started to consider the range of twenty-first century photographers that are posting work. Amateurs are becoming discouraged because they are offered access to professional work in a much less professional manner. The confusion between professional and amateur is evident; the line is now blurred because of the ability to view photographs from all ranges of artists so easily over the Internet. Due to the lack of awareness, education and experience many amateur photographers that have the potential to produce great work are becoming discouraged.

My research led me to believe that artists could be becoming discouraged for two reasons. First, they see “how much is out there” and become overwhelmed or discouraged; either comparing their lack of skills to the professionals represented online or believing that there is ‘no more room’ for new work. Second, it is important to point out that some artists are discouraged because of the lack of professionalism that goes with displaying photographs on a website, in a blog, or online in any means.

I feel that it is more important now than ever to address this pattern and do so by utilizing the same means of communication that amateur photographers are embracing. After researching this issue I’ve decided that I feel strongly that this thesis piece does utilize the Internet as a means of display and reproduction. This is because the target audience of web users who are displaying photos online will essentially be targeted and reached through the same means of communication that they are utilizing to communicate online with each other.

With further research, I have reinforced my belief that through developing an online application that will educate amateur photographers on design theory and the rules of composition, I will be able to create awareness about the importance of traditional visual art practices. I believe that the demonstration and application of these guidelines will allow amateur photographers to begin see where their skills must improve, and they will be inspired to improve their photographs as well. This application will create awareness about photography’s significance as a traditional visual art as well as a means of visual communication.

By relating visual art theories to subjects such as photojournalism, documentary photography, and fine art photography users will be equipped with the knowledge to live up to their potential as photographers. After further research, I can conclude that through the development of traditional composition skills and an educational understanding of visual communication and visual literacy amateur photographers will be motivated to see photographs as an art, in context with meaning, message, and effectiveness.

Budget

After researching the scope of this thesis, I've concluded that the budget for this project would mostly consist of work costs, or time expenditures. Developing the prototype for this application will be approximately half of the work in this case; research and content development will make up the remaining estimated fifty percent of the project. There will be other aspects to the development of this thesis as well, but these are the two main elements of the project included in the timeline.

If this application were to be developed in real time, I would foresee it being a project for a research and development team as part of a ‘pro-bono’ corporate or educational

campaign. In that case, there would be the cost for employing the research members of the team as well as the development members. The cost to employ team members would be per hour, and I would foresee a project such as this being funded through a professional industry or possibly by an educational or visual art research grant. There would also be the software and hardware costs, necessary programs including the Adobe Creative Suite as well as access to the Internet and a computer/hardware system that would perform the developmental aspects of this project. In this case, I have access to both the software and hardware necessary. However, an external cost that may only pertain to me would be the purchasing of necessary development resources, seeing as I have yet to learn some of the development skills I'll need to complete this project.

Other budget elements would include cost of product/application promotions, a photography budget (i.e. to gain rights to use specific photos as educational examples) as well as the hosting cost to display this product on the web. In my case, I will be involved in promoting the thesis exhibition, and I will be promoting my own work by entering design and computer graphics competitions, which sometimes have fees, associated per entry. I will also be hosting the final results, and pooling my resources to get the word out to other students, professors, and professionals that this application is available online to view and interact.

In Summary

- Cost allotted for developmental resources, \$100.00
- Cost of time spent on implementation, approx. \$2400.00 (i.e. Six weeks working approx. 20 hours per week/\$20 per hour; time lost to salaried or freelance work)
- Example of competition entry fees, Communication Arts \$100.00 - \$125.00
- Cost of promotional print materials, approx. \$40.00
- Hosting costs are approximately, \$60.00 - \$80.00 per year

Marketing Plan

The Marketing Plan for this application as a professional development would theoretically include sending out print and web advertising materials specifying the release date of the application as well as the components and features. These print materials would be sent to both colleges and universities, and the contact list would include various online photo community executives as well. Awareness would be key, so I was thinking about the possibility of having an online countdown until the release date of the project, where amateur photographers and other members of the target audience could sign on to an email list of updates, feature 'previews' as well as the real-time link to countdown for the release date.

The marketing plan for this Thesis Project includes developing the posters and marketing materials as a group for the exhibition. Also, the creation of an online

campaign would be important, both as a group and for my individual release of this Thesis application. I would plan to send this release to co-workers, family, other graphic and computer graphic design contacts, alumni of the program, and members of the photo community within upstate New York. I also plan to develop entry forms for, both interactive and information design competitions; as well as develop a branch of my portfolio to house this project permanently online. As previously stated, this application will be a prototype of a specific component of photography community websites, so I will release this project with an appropriate disclaimer.

Project Timeline

The timeline for this thesis project will follow the traditional guidelines as any Computer Graphics Design thesis project. The overview is as follows, broken down by quarter and specified in some instances by the mid- quarter mark in parentheses.

Fall Quarter

- Develop the problem statement and the complete Thesis Proposal (mid-quarter)
- Research the problem statement, and develop the content to be included within the application, as well as the interface style and design
- Research developmental aspects of the proposed project, including the specific elements of xml, dynamic content, and ways to incorporate swf objects, images, and text within the application
- Work on summarizing process and methods with flowcharts and sketches
- Approach committee members with problem statement, get feedback and finalize committee members
- Complete the survey of literature and submit research to committee for feedback
- Post thesis research, progress, and proposal draft online (mid-quarter)
- Finalize proposal, write abstract, and submit for approval

Winter Quarter

- Develop Flash functionality 'prototype' for the application, begin trial implementation for elements of the interface, finalize the content outline for the application, begin design of the application and user interface (mid-quarter)
- Finalize the layout and design for the application, finalize the storyboards and flowchart, begin to build the interface in flash, incorporate functionality and elements of motion and user interaction
- Troubleshoot any errors or problems with functionality; finalize look and structural elements of the design, have a product/prototype with user interaction fully established/functional
- Individual or Group Committee Meetings (mid-quarter, and before finals)

- Update the thesis site to summarize the stages of the project and process, incorporate interface design into website, update project and website to reflect committee feedback (mid-quarter)
- Add documentation to the thesis website, finalize design and functionality for the interface, build out homepage to incorporate the prototype into the website
- Usability Testing, post interface as a link from the process site, update and finalize all content on the process site
- Interface Fully Developed, Present Idea and Functionality

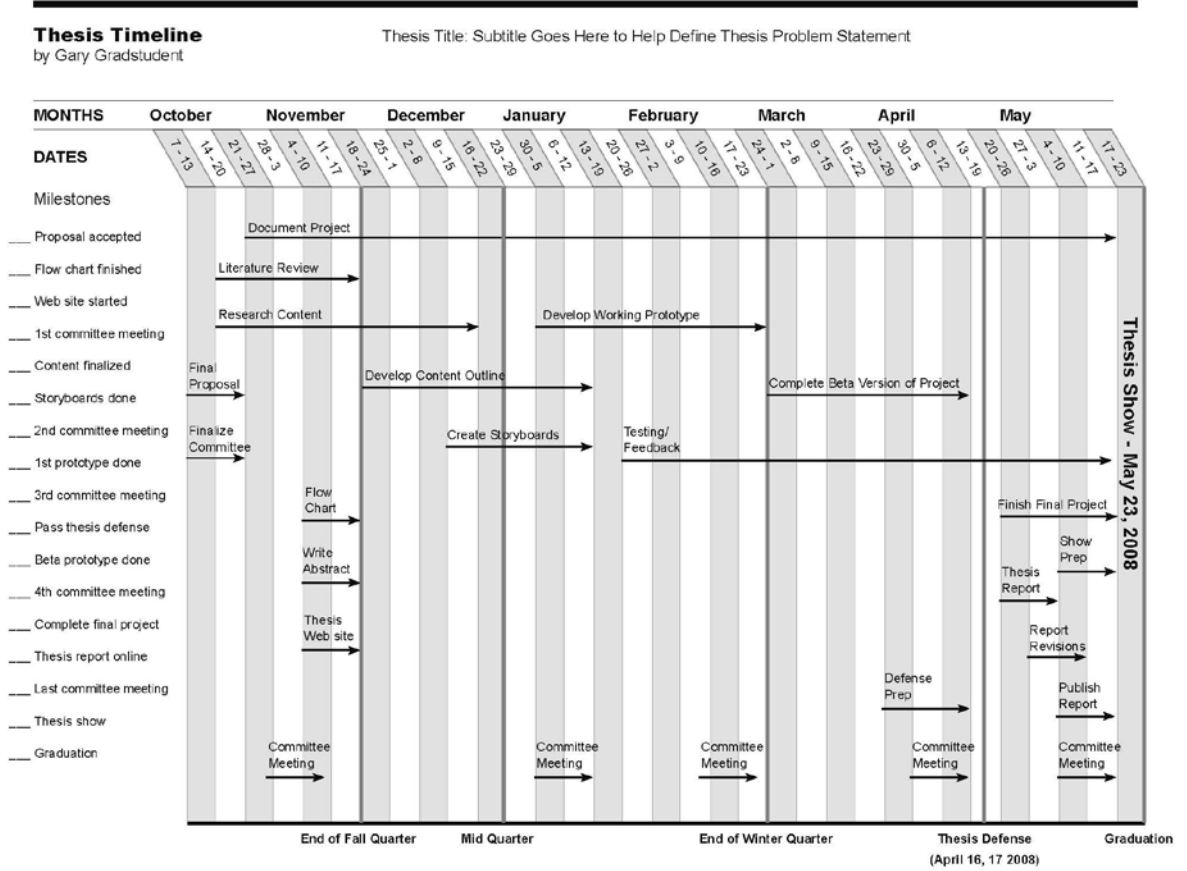
Spring Quarter

- Begin editing and revisions process, complete interface testing, usability and functionality testing, and document the process on the website and as an amendment to the proposal and documentation
- Prepare defense presentation and documentation/summary of the project
- Individual or Group Committee Meetings (mid-quarter, and before finals)
- Finalize the beta version of this project/application, finish final project, incorporate feedback from committee members and makes necessary changes due to testing
- Defense Presentation, April 16th & 17th; utilize process site to explain project, feedback, and goals (mid-quarter)
- Prepare for Thesis Exhibition, group marketing pieces, final documentation, and final version of project to be displayed

Possible Enhancements

- Develop flash video demonstrating functionality of interface and application, possibly an interactive map of the interface and how it is used
- Include more examples demonstrating the traditional rules of photography, so that a different 'set' of examples will appear each time the user opens this application, essentially learning new information and being able to continue to use this application as an educational tool as it is updated
- Incorporate metadata into the application allowing the flash program to read and identify user uploaded images and suggest composition rules that apply

6.2 Thesis Project Timeline



A Visual Understanding: An Interactive Learning Application

Please fill out this questionnaire. This questionnaire is part of an Application Development Process. The collection of data is one of the final stages of surveying usability and design of the application, titled "A Visual Understanding." The application can be accessed online via the link

<http://thesis.firstnamejoanna.com/index/flash/thesis.html>

Please explore the application and then respond to the following statements as to whether you agree, strongly agree, disagree, strongly disagree, or remain neutral.

1. The goal of this website is clear.

Strongly Agree Agree Neutral Disagree Strongly Disagree

2. In general, the links on the home page are clear.

Strongly Agree Agree Neutral Disagree Strongly Disagree

3. I was able to find the appropriate link for information I wanted on the site's home page.

Strongly Agree Agree Neutral Disagree Strongly Disagree

4. The titles on each page are understandable.

Strongly Agree Agree Neutral Disagree Strongly Disagree

5. Overall, it is easy to distinguish between the primary content and secondary content on this site.

Strongly Agree Agree Neutral Disagree Strongly Disagree

6. The links take me where I expect to go.

Strongly Agree Agree Neutral Disagree Strongly Disagree

7. This website is easy to navigate.

Strongly Agree Agree Neutral Disagree Strongly Disagree

8. This website has a pleasing design.

Strongly Agree Agree Neutral Disagree Strongly Disagree

9. The organization of information on this site is clear.

Strongly Agree Agree Neutral Disagree Strongly Disagree

10. The educational content is clearly labeled.

Strongly Agree Agree Neutral Disagree Strongly Disagree

11. The function of each menu item is easily understood.

Strongly Agree Agree Neutral Disagree Strongly Disagree

12. The secondary navigation is well organized.

Strongly Agree Agree Neutral Disagree Strongly Disagree

13. The secondary navigation is easy to find.

Strongly Agree Agree Neutral Disagree Strongly Disagree

14. All of the functions I expected to find are present.

Strongly Agree Agree Neutral Disagree Strongly Disagree

15. All of the educational content I expected to find are present.

Strongly Agree Agree Neutral Disagree Strongly Disagree

*The Application Development Team would like to **thank you** for generously volunteering your time to participate in this usability test. Your input will be invaluable in the development of the Interactive Learning Application.*

We hope that you found it to be an interesting and enjoyable experience! Please complete the final questions and leave any additional comments or feedback you may have in the space provided below (on the reverse side of this page)!

Photography Experience Amateur Intermediate Expert

Year in School Freshman Sophomore Junior Senior

Gender Male Female

Comments

Thank You! Please contact J17Ward@gmail.com if you have further questions.

RIT Clipboard Usability Survey External Links:

<https://clipboard.rit.edu/take.cfm?sid=3A6DADA6>

<https://clipboard.rit.edu/take.cfm?sid=DE1433BC>

7 Documentation

7.1 Text Resources

Visual Communication: Perception, Rhetoric, and Technology

Introduction: Identity in visual communication.

Diane Hope, Preface and Introduction

Hampton Press. (2006).

Visual Communication: Perception, Rhetoric, and Technology

Theorizing Visual Intelligence: Practices, Development, and Methodologies for Visual Communication.

Rick Williams, From the Keynote Address

Hampton Press. (2006).

Visual Communication: Integrating Media, Art, and Science.

Newton, J. H., & Williams, R.

Lawrence Erlbaum. (2007).

Visual Rhetoric: A Reader in Communication and American Culture

Visual Rhetoric in Communication, Continuing Questions and Contemporary Issues.

Olson, L. C., Finnegan, C. A., & Hope, D. S.

Sage Publications, Inc. (2008).

Photography, Ninth Edition

Displaying Your Work, The Internet- Gallery and Resource

Barbara London, Jim Stone, John Upton

Pearson Education, 2008

Magazine Article Resources

Flash Gurus

Web Designer Magazine

Issue 150, Page 34

www.webdesignermag.co.uk

Creative Blog > Flash

Mark Shufflebottom

Web Designer Magazine

Issue 150, Page 54

www.webdesignermag.co.uk

Flash Refreshed! Flash Player 10 Guide

Mark Shufflebottom
Web Designer Magazine
Issue 152, Page 46
www.webdesignermag.co.uk

Gallery: Cream of the Crop

Web Designer Magazine
Issue 145, Page 12
www.webdesignermag.co.uk

7.2 *Online Resources*

ProQuest Articles

Minimal Art

Oliver Parfitt
The Oxford Companion to Western Art
September, 2009
http://www.oxfordartonline.com.ezproxy.rit.edu/subscriber/article/opr/t118/e1754?source=oao_gao&source=oao_t118&search=quick&q=minimal&pos=1&_start=1

On Symmetrical Composition

Chong Ho Yu
Photography Society of America Journal
August, 2003
<http://proquest.umi.com.ezproxy.rit.edu/pqdweb?index=2&did=463626691&SrchMode=1&sid=11&Fmt=4&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1253366237&clientId=3589>

Composition Techniques from a Master Photographer, Ernst Wildi

William Rankin
Phillips Business Information Corporation
March, 2001
<http://proquest.umi.com.ezproxy.rit.edu/pqdweb?index=6&did=69756054&SrchMode=1&sid=13&Fmt=3&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1253366719&clientId=3589>

Six tips for Improving your Compositions

Anonymous
Popular Photography
March, 1999
<http://proquest.umi.com.ezproxy.rit.edu/pqdweb?index=70&did=39187235&SrchMode=1&sid=17&Fmt=7&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1253367174&clientId=3589>

RIT Library Journals and Articles

Visual Communication: Integrating Media, Art, and Science.

McNeil, S., & Zibluk, J.
Visual Communication Quarterly, (2008).
<http://search.ebscohost.com.ezproxy.rit.edu>

Visual Imagery as Communication

Foss, S.
Text & Performance Quarterly, (1992).
<http://search.ebscohost.com.ezproxy.rit.edu>

A Natural Visual Mind: The Art and Science of Visual Literacy.

Dake, D.
Journal of Visual Literacy, (2007).
<http://search.ebscohost.com.ezproxy.rit.edu>

Visual Communication.

Dyrud, M., & Worley, R.
Business Communication Quarterly, (2006).
<http://search.ebscohost.com.ezproxy.rit.edu>

Communicating Visually: Incorporating Document Design in Writing Tasks.

Campbell, N.
Business Communication Quarterly, (2006).
<http://search.ebscohost.com.ezproxy.rit.edu>

The Visual Advantage.

Coomber, E.
Communication World, (2008).
<http://search.ebscohost.com.ezproxy.rit.edu>

Online Documentation

How Web Advertising Works

Brain, Marshall
HowStuffWorks.com
October, 2008
<http://computer.howstuffworks.com/web-advertising.htm>

Widgets: The Future of Online Advertising

Peter Yared
BusinessWeek.com
February 2008
http://www.businessweek.com/technology/content/feb2008/tc20080229_871649.htm

Why Widgets Don't Work

Ben Kunz

BusinessWeek.com

March 2008

http://www.businessweek.com/technology/content/feb2008/tc20080229_131531_page_2.htm

Creating Real-Time 3D with Flash Dynamic Drawing Tools

Chad Corbin

Macromedia Flash Developer Center

September, 2009

http://www.adobe.com/devnet/flash/articles/flash_3d.html

Positioning Flash CS4 Objects in 3D Space

Adobe Creative Team

Peachpit Press

September, 2008

<http://www.adobepress.com/articles/article.asp?p=1247261>

Introduction to 3D using AS3

Kirupa Article

March, 2009, September, 2009

http://www.kirupa.com/developer/as3/intro_3d_as3_pg1.htm

Working with 3D Art

Chris Georgenes

Adobe TV

April, 2009

<http://tv.adobe.com/watch/learn-flash-professional-cs4/working-with-3d-art/>

An Art Critic on Photography

Frederick H. Evans

Notes on Photography, A George Eastman House Publication

Amateur Photographer, vol. 47, no. 1238, p. 625-26.

June 1908, September 2009

http://notesonphotographs.eastmanhouse.org/index.php?title=Evans,_Frederick_H._%22An_Art_Critic_on_Photography%22

Addressing the Photograph

Grant Romer

Notes on Photography, A George Eastman House Publication

Viewed September, 2009

http://notesonphotographs.eastmanhouse.org/index.php?title=Romer,_Grant._Addressing_the_Photo

7.3 *Inspiration*

Online Resources

Case Study 1

<http://www.adidas.com/originals>

Case Study 2

<http://www.squarespace.com>

Graphic Inspiration

<http://www.newbalance.com>

Interaction Inspiration

<https://www.memolio.com/>

Eastman House Exhibition

New Topographics: Photographs of a Man-altered Landscape

Specific Artists, Robert Adams, Frank Gohlke, Lewis Baltz

Origin 1975, Exhibition September, 2009

http://www.eastmanhouse.org/exhibits/container_123/index.php

50 Photographs by Jessica Lange

Artist, Jessica Lange

September, 2009

http://www.eastmanhouse.org/exhibits/container_125/index.php

7.4 *Bibliography*

Hope, D. S. (2006). *Introduction: Identity in visual communication*. In Hope, D. S. (Ed.), *Visual communication: perception, rhetoric, and technology* (p. 1-27). Cresskill: Hampton Press.

Lange, J. (2008). *50 Photographs*. New York: powerHouse Books.

London, B., Stone, J., & Upton, J. (2007). *Photography (9th Edition)*. Alexandria, VA: Prentice Hall.

Newton, J. H., & Williams, R. (2007). *Visual communication: Integrating media, art, and science*. Mahwah, NJ: Lawrence Erlbaum.

Olson, L. C., Finnegan, C. A., & Hope, D. S. (Eds.), *Visual rhetoric: A reader in communication and American culture*. (p. 1-14). Thousand Oaks: Sage Publications, Inc.

Williams, R. (2006) *Theorizing visual intelligence: Practices, development, and methodologies for visual communication*. In Hope, D. S. (Ed.), *Visual communication: Perception, rhetoric, and technology* (p. 31-56). Cresskill: Hampton Press.

(2006). *Seeing America: Painting and sculpture from the collection of the memorial art gallery of the university of Rochester*. Rochester: University of Rochester Press.